BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Report to Congress Regarding	)	
the ORBIT Act	)	**IB Docket No. 10-70**
	)	
	)	

To: The Commission

COMMENTS OF CAPROCK COMMUNICATIONS, INC.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

These Comments bring to the Commission's attention for inclusion in its Report to Congress the aggressive, anti-competitive practices of Intelsat and its wholly-owned subsidiary Intelsat General Corporation ("IGEN"). These practices are adversely impacting the ability of CapRock and other satellite network service providers ("SNSPs") to deliver sophisticated, cost effective end-to-end satellite communications services to U.S. Government and commercial end users located in thin route markets throughout the world. In today's satellite industry, Intelsat is in a position to engage in these practices because virtually every end- to-end service delivered by SNSPs requires the use of at least one or more Intelsat satellites.

There are two related structural issues associated with international satellite communications that require Commission scrutiny and which should be reflected in its Report to Congress. Both relate to the continuing growth in the demand for satellite communications as reflected in steady increases in international satellite transponder costs and the high levels of satellite capacity utilization (in excess of 90% by some estimates).

The first is the lack of investment in more advanced, higher capacity satellite transponder technologies by Intelsat. In recent years, new satellites that have been launched are largely replacements of satellites that reached end-of-life. In addition**,** the technology deployed by Intelsat in these satellites does not reflect the advances being made in the satellite communications industry as a whole. As such, there has been very little increase in overall capacity on-orbit. This has lead to a drastic increase in bandwidth prices,

The other structural issue relates to the management of orbital slots which in and of themselves have substantial economic value. Current Commission policies focus on maintaining projected commitments to construct and deploy satellites. Newer more efficient spacecraft

technologies that could positively impact the currently tight supply cannot make it to market, in part, because of "orbital slot gaming." Currently, to retain these orbital slots when an active satellite approaches end of life, satellite operators such as Intelsat re-task an obsolete satellite into an orbital slot for which it was not designed, even though in many cases the re-tasked satellite is not capable of actually providing communications services or at least not enough to represent any significant marketable capacity.

To overcome this challenge and encourage the introduction of advanced bandwidth satellites, the FCC should revisit its policies for obtaining and retaining the available satellite orbital slots, including the adoption of "technology refresh" obligations that require satellite operators to introduce more advanced satellites as existing satellite reach end-of-life. If the technology refresh obligations are not met, the satellite operator should lose access to the orbital slots.

Intelsat's actions underscore the foresight of the Commission in securing regulatory oversight over licensing issues for FSS providers such as Intelsat and thus allowing the Commission to govern and enforce its longstanding interests in ensuring reasonable pricing and connectivity to U.S. customers having communications requirements in rural and remote regions throughout the world.

In addition to the harmful activities detailed above, Intelsat has also engaged in anti-competitive activity when marketing/selling capacity to SNSP's throughout the world. These practices, implemented jointly by Intelsat and IGEN, include (1) mandatory minimum purchase requirements (the "Forced Bundle") of Intelsat satellite capacity in a recent procurement by the Navy and (2) IGEN's scheme of pricing of Intelsat satellite capacity to determine the winner

among competing SNSPs of discrete task orders for end-to-end satellite services under an open U.S. Government procurement.

The Forced Bundle and outcome-driven pricing schemes of Intelsat and IGEN in connection with U.S. Government procurements clearly violate the commitments made by Intelsat in the *Lockheed Martin/Comsat/Intelsat* proceeding that it would continue to provide reasonable, non-discriminatory access to Intelsat space segment to competitors of Intelsat's unregulated affiliates.

CapRock recommends that the Commission implement procedures to ensure that IGEN is fully insulated from inquiries and transactions involving Intelsat space segment and other SNSPs whom IGEN competes with. In connection with the Forced Bundle and the discriminatory pricing of Intelsat space segment, the Commission should initiate an enforcement action against Intelsat and IGEN for failing to maintain its commitments made in connection with competitive access to Intelsat space segment made in the *Lockheed Martin/Comsat/Intelsat* proceeding.

Over the last decade Intelsat secured approval to consolidate its control over the global market place (through the purchase of PanAmSat and Loral Skynet's North American Satellites), enter the U.S. Government Market (through the purchase of Comsat General and G2 Satellite Solutions (through the purchase of PanAmSat)), and delay its stock offerings as required in the ORBIT Act. These activities over the past decade have helped lead to Intelsat's current monopolistic behavior and market position, its current debt load, and the subsequent lack of investment in new capabilities and capacities.

While senior executives at Intelsat have repeatedly turned a deaf ear to protests by CapRock and other SNSPs over the past several years, CapRock urges the Commission to take steps as recommended herein.. Anything short of timely Congressional or Commission attention

to these issues will inevitably lead to an even greater level of anti-competitive behavior by Intelsat and IGEN toward its customers, such as CapRock, and to the ultimate consumers of CapRock's services, U.S. Government and commercial customers having satellite communications requirements in thin-route markets throughout the world.

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CapRock Communications, Inc. ("CapRock") submits these Comments in response to the Public Notice inviting comments, insights and perspectives by, among others, persons providing international satellite communications that utilize satellite space segment capacity available from Intelsat and Inmarsat, in order to inform the Commission as it prepares its annual report to Congress on implementing the Open-Market Reorganization for the Betterment of International Telecommunications Act (the "ORBIT Act").[1] The purpose of the ORBIT Act is to "promote a fully competitive global market for satellite communications services for the benefit of consumers and providers of satellite services and equipment by fully privatizing INTELSAT and Inmarsat."[2] These Comments focus on Intelsat[3] and its wholly-owned subsidiary Intelsat

[1] Public Notice, Report No. SPB-234, DA10-448 (rel. April 1, 2009).

[2] *Id.* At 1; *see also* ORBIT Act, Pub. L. No. 106-180, 114 Stat 48, § 2 (2000).

[3] Herein, the capitalized term "INTELSAT" refers to the International Telecommunications Satellite Organization, established by agreements signed by governments and operating entities ("Signatories"), initially under the so-called "Interim Agreement" of 1964 and as superceded by the so-called "Definitive Arrangements" which entered into force in 1973. The name "Intelsat" refers to the privatized successor to INTELSAT whose current legal name is Intelsat SA.

General Corporation ("Intelsat General" or "IGEN"). In particular, CapRock is submitting these Comments to apprise the Commission and Congress regarding the pervasive anti-competitive practices of Intelsat and IGEN that are adversely impacting the viability of CapRock and other competitors of IGEN, and also having severe negative consequences on the end use customers, including the U.S. Government.

I. CapRock's Competitive Position in Today's International Satellite Communications Marketplace

CapRock Communications Inc., a U.S. Company, is a satellite network service provider ("SNSP") with nearly 30 years experience and over 700 employees worldwide. CapRock acquires space segment services from INTELSAT, Inmarsat, SES WorldSkies and regional satellite providers such as Eutelesat and Telesat. CapRock owns and a operates a multi-million dollar global infrastructure that includes five teleports, four 24 x 7 network operations centers, and twelve regional field service centers. It is one the world's leading providers of satellite communications services to remote and harsh region markets providing complete end-to-end satellite communications services to Offshore Energy, Transoceanic Shipping, and Government end-users.

CapRock operates networks in over 120 countries, across multiple satellite fleets and with a sizable portfolio of satellite capacity across the C, Ku, Ka, and X frequency bands. The largest supplier of satellite capacity to CapRock is Intelsat/IGEN. CapRock's services include integrated offerings of remote transmission equipment, installation and maintenance, network design and implementation, space segment, terrestrial interconnection to both public and private networks, and application services such as telephony, IPTV and MPLS. Through its wholly-owned subsidiary, CapRock Government Solutions, Inc. (formerly Arrowhead Government Solutions), CapRock has been serving the remote communications needs of the U.S.

Government, including the DoD, federal civilian and intelligence agencies, through various prime contracts and subcontracts, for over 20 years with a high degree of proficiency. According to Intelsat, CapRock, including CapRock Government Solutions, is among Intelsat's top 12 customers.

The market for international fixed satellite services (FSS) communications services may be subdivided into three principal categories: 1) satellite space segment capacity that is provided by the global satellite operators, (such as Intelsat and SES WorldSkies); 2) subscription services which are defined services with or without bundled equipment; and 3) fully managed, end-to-end network services which is the principal focus of CapRock and other SNSPs, such as, Globecomm, Artel, DRS and Segovia. An integral component of a fully managed, end-to-end solution is the ability of CapRock and other SNSPs to secure space segment capacity from a mix of regional and global satellite operators, optimizing coverage and capability at competitive, market-based rates.

A Department of Defense (DoD) report on its expenditures for commercial satellite services covering the years 2000-2005, prepared in 2006 ("DoD Report"),[4] underscores the critical role of SNSPs in the provision of international satellite communications to the Government. The DoD Report focuses on the Defense Information Systems Network ("DISN") Satellite Transmission Services-Global Contract ("DSTS-G"), for which the prime contractors are CapRock Government Solutions, Artel and DRS. The DoD Report explained that obtaining service through SNSPs saved DoD substantial sums over the duration of the study period which included the early years of the conflict in Iraq, emphasizing the following:

[4] Commercial Satellite Communications (COMMSATCOM) Service Spend Analysis and Strategy Report in Response to Section 818 of Public Law 109-163—The National Defense Authorization Act for Fiscal Year 2006 (attached hereto as Exhibit A) ("DoD Report").

1. Satellite bandwidth procured under DSTS-G was up to 40% lower than the balance of satellite communications bandwidth because the prime contractors exercised their flexibility in the marketplace to secure space segment capacity from a regional satellite provider.[5]

2. DSTS-G's "highly competitive and individualized construct" has provided "the most opportune" solutions for various requirements.[6]

3. Because multiple factors contribute to the cost of satellite bandwidth, multi-year procurements of space segment capacity, provided directly by satellite operators, do not deliver the presumed savings of multi-year pricing commitments.[7]

Accordingly, a regulatory framework for international satellite services that supports the full participation of SNSPs in delivering cost-effective, international satellite services is in the public interest, furthering Economic and National security.

CapRock's success in the government sector as an SNSP is matched by its growth and effectiveness in delivering cost effective solutions to maritime and energy industry customers throughout the world. CapRock is a high touch and high value-add service provider to its customers in remote and harsh operating environments, such as offshore energy facilities, mining operations, oceanic vessels, military camps and other customers located in "thin route" markets. CapRock offers network design, implementation, and ongoing operational capabilities and services with its in-house assets and field deployed personnel that Intelsat/IGEN either cannot provide or must outsource to third parties. While some satellite operators compete in the provision of international satellite space segment and satellite end-to-end services, such as Intelsat and IGEN, others are focusing solely on satellite operations. Recently, SES WorldSkies has informed the industry that it will focus on its core satellite operator business, de-emphasizing its end-to-end services business formerly named AMERICOM Government Systems (AGS).

[5] DOD Report, at iv.

[6] *Ibid*.

[7] DOD Report, iv.-v.

II. Comments

A. The Commission Has Consistently Recognized the Importance of Access to Intelsat Space Segment Capacity in Meeting U.S. Requirements for Communications to "Thin-Route Markets"

Consistent with the ORBIT Act's goal of privatizing INTELSAT, the Commission granted the application of the entity created to conduct business as the privatized Intelsat to become a Commission licensee in order to promote a number of important U.S. interests, including the continued and expanded availability of services for U.S. Customers with requirements for communications to thin-route markets:

> The benefits that will accrue to Intelsat LLC by being an FCC licensee will be matched by benefits to the United States in serving as its licensing jurisdiction. . . . [T]he INTELSAT global system is and will remain after privatization an important source of satellite transmission capacity for commercial and Federal Governmental needs in the United States. **In particular, the INTELSAT system also is the primary, if not only, means of international connectivity between the United States and most thin-route countries. Licensing Intelsat LLC would give the United States jurisdiction over the global satellite system and enable it to ensure the continued availability of services to U.S. commercial and Federal Governmental users of the system**.[8] (Emphasis added.)

Importantly, the Commission had previously established policies that are supposed to ensure SNSPs' full participation in the thin-route markets to meet the requirements of U.S. commercial and Federal Government users.

In 1999, the Commission adopted its *Direct Access* policy to ensure that domestic services providers could secure INTELSAT space segment under the same terms and conditions

[8] *In the Matter of the Applications of Intelsat LLC (For Authority to Operate, and to Further Construct, Launch, and Operate C-band and Ku-band Satellites that Form a Global Communications System in Geostationary Orbit)*, Memorandum Opinion Order and Authorization, 15 FCC Rcd. 15460 (rel. August 8, 2000), at ¶31.

as non-US carriers and other Signatories of INTELSAT, including Comsat.[9] Among the benefits of direct access, the Commission noted that for several years INTELSAT had been offering far more service options (bandwidths, service periods and pricing) to foreign Signatories and carriers as Comsat were offering to domestic services providers.[10] In adopting *Direct Access*, the Commission recognized that Comsat's status as the exclusive domestic reseller of INTELSAT space segment was no longer in the public interest.[11] In the ORBIT Act , Congress codified the *Direct Access* policy, directing that all carriers and customers were entitled to Level 3 direct access to INTELSAT space segment.[12]

In considering the applications for assignment of authorizations in the *Lockheed Martin/Comsat/ Intelsat* transaction in 2002 and recognizing that the *Direct Access* policy was no longer operative as Intelsat was privatized, the Commission expressly reserved its oversight authority over Intelsat and Comsat to ensure that competitors of Comsat, such as CapRock and the other SNSPs, could still obtain access to Intelsat space segment in order to preserve competition in the thin-routes market:

> [I]n its *INTELSAT ORBIT Act Compliance Order*, the Commission found that INTELSAT's privatization would carry forward the intent of the ORBIT Act, which provides for direct access to Intelsat for U.S. customers. The Commission noted that, after privatization, Intelsat would have flexibility to negotiate individual contracts with customers and that there was no indication that Intelsat would inappropriately favor its former Signatories over other users. This was a primary concern for the Commission. … Based on the representations of Assignees [the privatized Intelsat] in their July 24, 2002 letter to the Commission, we understand that current Comsat customers will have the same opportunity to obtain new capacity as other Intelsat customers, subject to availability based on Intelsat's global demand.

[9] *Direct Access to the INTELSAT System*, Report and Order, 14 FCC Rcd. 15703 (rel. Sept. 16, 1999).

[10] *Id* at ¶31.

[11] *Id* at ¶45.

[12] 47 U.S.C. § 765(a).

> According to Assignees' representations, Intelsat makes its decisions based on commercial considerations, with no distinction between the treatment of pre-privatization customers, including former INTELSAT Signatories, and post-privatization customers. U.S. carriers will have available, on a going-forward basis, the terms and conditions available to former INTELSAT Signatories and other foreign carriers with which they compete on a global basis. **We remain concerned, however, about Intelsat's ability to exercise market power on thin-routes. … Because Intelsat USA Sales Corporation may have an incentive to take advantage of its private carrier status and discriminate in the provision of space segment service… [w]e will continue to monitor the performance of the thin-route market to ensure that anti-competitive abuses do not occur (emphasis added)**.[13]

The Commission's previous insights and sensitivity to potential abuses regarding access to Intelsat space segment is now proving well-founded as Intelsat and IGEN are currently engaged in anti-competitive practices limiting and prescribing the manner in which U.S.-based competitors to IGEN, such as CapRock and other SNSPs, obtain Intelsat space segment capacity.

B. In Recent Years Intelsat Has Ceased to Comply With the Letter and Spirit of the *Direct Access* Policy and Has Actively Engaged in Anti-Competitive Practices

Intelsat and IGEN are now going far beyond Comsat's restrictive, anti-competitive practices that lead to the adoption of *Direct Access* in 1999 and are confirming the Commission's strong interest in maintaining jurisdiction over Intelsat so as to maintain competition to thin-route markets throughout of the world. Intelsat is now seeking to control the market outcome of procurements, particularly in the U.S. Government sector. Intelsat is engaging in a number of strategic business practices that are artificially restricting space segment supply, causing price escalation, directly manipulating procurement processes, and restricting competition.

[13] *Lockheed Martin Corporation, COMSAT Corporation, and COMSAT Digital Teleport, Inc., Assignors and Intelsat, Ltd., Intelsat (Bermuda), Ltd., Intelsat LLC, and Intelsat USA License Corp., Assignees Applications for Assignment of Earth Station and Wireless Licenses and Section 214 Authorizations and Petition for Declaratory Ruling*, Order and Authorization, 17 FCC Rcd. 27732 (rel. Oct. 25, 2002) ¶¶ 33-34 ("*Lockheed/Comsat/Intelsat Order*")(emphasis added).

1. Intelsat Has Driven Consolidation of Satellite Fleet Operators Dominating the Market for International Satellite Capacity

Following Intelsat's acquisition of Comsat, it engaged in a number of strategic acquisitions including the purchase of the North American satellite fleet assets of Loral SkyNet and then, rival PanAmSat. Intelsat managed to effectively eliminate one of its largest competitors and gain greater control over the international fixed satellite service (FSS) commercial satellite fleet that serves North America,[14] nearly doubling the size of its global fleet to over 50 satellites today.[15] In parallel, European-based SES S.A. acquired WorldSkies, the successor to NewSkies, a separate company that was originally spun out of Intelsat as part of the privatization process. As a consequence of this market consolidation, there are now two global satellite fleet operators, Intelsat SA and SES WorldSkies which today control over 90 satellites – the bulk of the world's FSS communications satellite fleet. Other satellite fleet operators like Telesat and Eutelsat do provide coverage over specific areas, but generally cannot compete with the range of resources and assets of Intelsat.

2. IGEN Manipulates DSTS-G Procurements with "Incumbent Pricing Policy"

When U.S. Government contract vehicles prevent a direct award to IGEN, IGEN attempts to pre-determine the outcome and control pricing of its satellite capacity by favoring a selected prime contractor over all other competitors, through their "Incumbency Pricing Policy." The previously discussed DSTS-G contract is the primary vehicle by which DISA and the DoD purchase satellite space segment. The original contract was awarded in 2001 as an IDIQ to three prime contractors CapRock Government Solutions, DRS and Artel. This contract has employed

[14] *Consolidated Application for Authority to Transfer Control of PanAmSat Licensee Corp. and PanAmSat H-2 Licensee Corp.*, Memorandum Opinion and Order, 21 FCC Rcd. 7368 (rel. June 19, 2006) ¶42 (noting that PanAmSat and Intelsat control 49 percent of North America transponder capacity sales).

[15] *See*, http://www.intelsat.com/network/ (last visited April 7, 2010).

a two-tiered competition model to foster market creativity, maintain price competiveness, and to ensure security. As such, no satellite fleet operator has had direct access to sell to the DoD under this contract vehicle. In order to undermine the intent and value of this type of contract and gain greater control over the outcome of every possible satellite capacity procurement, IGEN instituted a number of approaches to favor one prime contractor over the other contractors on any given task order. Its "Incumbency Pricing Policy" basically offers a significantly more favorable price to the incumbent on the task order that is under re-competition.

In essence, IGEN is in a position to pre-ordain which prime contractor will receive the award by fixing the Intelsat space segment prices being offered to the three prime contractor bidders. Under the DSTS-G contract, the prime contractor's margins are extremely thin.. As a result, IGEN has the ability to both control which prime contractor will win on any given task order, and even dictate how much gross margin a prime contractor will capture.

3. "Forced Bundles" of Satellites Limits Competitor Solutions Against IGEN Direct Bids

Intelsat's IGEN business unit operates in the highly advantaged position as both a supplier and competitor to major value-added SNSPs. All SNSPs are required by Intelsat to buy capacity for government-related projects through IGEN, even in situations where IGEN is bidding the procurement directly against those SNSPs. IGEN's highly advantaged position is having an ongoing and measurable negative impact on the satellite communications industry at large by inhibiting free market competition and solution innovation in both commercial and government markets, and ultimately to the detriment of the end-use customers, including the U.S. Government

Given Intelsat's control over such a large percentage of FSS commercial satellites serving North America, it is extremely difficult, and in many cases impossible for a SNSP to provide

global satellite communications services without using the capacity from at least some Intelsat assets. As a result, virtually every SNSP is dependent on Intelsat for capacity and has no choice but to purchase services from Intelsat/IGEN, even in situations where Intelsat/IGEN is in competition with them. This is a condition that Intelsat/IGEN has actively exploited to manipulate the competitive landscape, as highlighted by the widely-publicized protest of the U.S. Navy's Commercial Broadband Satellite Program (CBSP) procurement.[16]

In connection with the CBSP procurement, Intelsat and IGEN publicly communicated that all unaffiliated CBSP bidders would be required to accept a pre-engineered space segment solution from IGEN. This was a highly unusual move. Since all of the bidders are experienced satellite communications solution providers with in-house engineering departments and at least three of the bidders actually operate their own teleports, each was more than capable of designing its own solution, including its space segment component. This pre-engineered solution of space segment capacity derived from multiple Intelsat satellites was described by IGEN sales personnel as a "Take It or Leave It Bundle" (the "Forced Bundle"). If an SNSP wanted to use some Intelsat satellites in its bid (which was absolutely essential), IGEN required the competing SNSPs to purchase the Forced Bundle and incorporate it in their bids.

The Forced Bundle proved to be substantially more expensive (up to $40 Million more expensive) than other approaches that SNSPs would otherwise have used in their CBSP bids. In fact, some of the satellites in the Forced Bundle would reach end of life before the end of the CBSP contract period, making the Forced Bundle non-compliant with the CBSP request for proposal. An optimal solution did not use all Intelsat satellites, but rather utilized a mix of the best spacecraft from a number of different providers around the globe.

[16] *See*, de Selding, Peter, *Intelsat CEO Dismisses Cartel Claim, Credits Added Value for $543 Million Deal*, Space News (Mar. 19, 2010), available at http://www.spacenews.com/satellite_telecom/031910intelsat-ceo-cartel-543-million.html (last visited April 7, 2010)("Space News Article").

This bundle was so suboptimal that IGEN's *own direct bid* did not employ it, but rather used a variety of satellites from other satellite fleet operators in addition to a subset of its own satellites, including SES Americom, JSAT, and EADS Paradigm. From IGEN's perspective, the Forced Bundle meant that it had control and knew exactly what it was bidding against – since it designed the third party bidders' solutions as well as its own. Despite multiple appeals and complaints to Intelsat/IGEN Executive Management that this practice was inherently unfair and tantamount to price fixing, IGEN forced and insisted on the approach.

4. SNSPs Are Experiencing Intimidation and Retribution for "Opposing" Intelsat

Due to Intelsat's dominant position in FSS satellite capacity, most SNSPs have been afraid to speak out against the anti-competitive practices for fear of retribution. Such retribution could be substantial. If Intelsat refuses to provide capacity or increases its quotes above market prices, the SNSP would either be out of business, or its business opportunities would be extremely limited, and, ultimately, the end-use customers will suffer due to higher monopolistic-type pricing. CapRock has begun to experience tangible retribution for protesting the Navy CBSP bid award.[17] Since lodging the protest earlier this year, Intelsat has refused to quote satellite capacity to CapRock on two recent opportunities. For those opportunities, CapRock was required to secure quotes from IGEN which set the prices far above market prices, placing CapRock's cost of space segment out of the competitive range for networked solutions to the end customer.[18]

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[17] *See, Protest of CapRock Government Solutions, Inc. Solicitation No. HC1013-09-R-0001 Defense Information Systems Agency Navy Commercial Broadband Satellite Program, End to End* (Feb. 2, 2010).

[18] It is at least in part because of IGEN's "Forced Bundle" tactic and attempt to control the competitive environment, that the CBSP protest has been receiving coverage in the satellite industry trade journals. In the Space News Article, "David McGlade, Intelsat's chief executive, characterized protests of the U.S. Navy's Commercial Broadband Satellite Program contract award to IGEN "as a rear guard-action by companies seeking to maintain a role that their principal customer no longer needs." *See,* Space News Article (Exhibit B). McGlade's quote indicates that Intelsat

C. Intelsat's Lack of Investment In Satellite Capacity and Control of Orbital Slots Artificially Constrains Space Segment Supply and is Stunting Innovation in Satellite Communications

That Intelsat is in a position to dictate these procurement outcomes is indicative of significant structural issues in the market for international FSS transponder capacity. Demand for satellite-based capacity has been climbing significantly over the last several years. When combined with the fact that much of the global commercial satellite capacity is operating at 90%+ utilization, there is an increasingly severe constraint on available satellite capacity. High definition voice, video, and data applications in the commercial sector are driving up satellite capacity demand. Mission critical operations from Unmanned Aerial Vehicles (UAVs) and non-tactical communications combined with limited supply in military satellites are driving up demand for commercial satellites in the Government sector.

Despite both immediate requirements and long-term forecasts for dramatically increasing satellite capacity demand, Intelsat is not adequately investing in new spacecraft. [19] While Intelsat has launched some new satellites in recent years, these satellites are generally only replacements for existing assets approaching end-of-life. They add little, if any, incremental bandwidth capacity to the global satellite portfolio. Also, in most cases a significant portion of the bandwidth on these replacement satellites is "pre-sold" before the spacecraft is even launched.

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seems to think it knows what is best for the Government end-user customer, and that the company is unconcerned with limiting the Government's access to multiple competitive alternatives. CapRock believes the Navy received proposals having less innovation and resulting in a higher total cost directly as a result of the use by IGEN of its Forced Bundle tactic.

[19] This lack of investment has been noted by others familiar with Intelsat's operations. (*See*, Comments of the International Telecommunications Satellite Organization ("ITSO") pp. 3-4, (March 30, 2006) *In Re: Report to Congress Regarding the Orbit Act* (IB Docket No. 06-61) available at http://fjallfoss.fcc.gov/ecfs/document/view?id=6518332412 (last visited April 7, 2010)).

Thus, by design to retain high prices and margins, or perhaps due to Intelsat's extremely high debt burden of over $16 billion (a debt to revenue ratio of 8:1), but whatever the reason, Intelsat is not investing in a meaningful expansion of its satellite space segment capacity. The high debt burden may be attributable to the fact that over last decade Intelsat has secured approval to consolidate its control over the global market place (through the purchase of PanAmSat and Loral Skynet's North American Satellites) and enter the U.S. Government Market (through the purchase of Comsat General and G2 Satellite Solutions (through the purchase of PanAmSat)), and the public stock offerings as contemplated by the ORBIT Act have not occurred. On the other hand, according to Intelsat's data, its financial results for the twelve months ended December 31, 2009, show substantial revenues and margins: Revenue - $2.5 billion; Intelsat Luxembourg Adjusted EBITDA $2.0 billion; and Intelsat Luxembourg Adjusted EBITDA as a percentage of revenue 79%.[20] While these number do not reflect sizable amounts paid in interest on its debt, the margins on revenues are substantial, strongly suggesting the adverse impact of the absence of competition in the market for international satellite transponder capacity.

The few new spacecraft that Intelsat is launching present two limitations to the industry and the marketplace. As noted, these spacecraft are predominantly only replacements for aging inventory and do not add any incremental capacity for sale in the marketplace. Secondly, the spacecraft that Intelsat is deploying are based on legacy technology. Many of the newest spacecraft launched represent 15 year old or older technical designs. These older designs are proven, but only provide the transponder capacity of satellites launched before the advent of the Internet, high definition video, or UAVs.

[20] Available at http://www.intelsat.com/investors/company-profile.asp (last viewed on April 7, 2010).

There are newer technologies available that can significantly expand bandwidth capacity on a satellite of the same basic size as those in orbit today. New technologies, particularly in the Ka frequency band can employ advanced on-board switching to increase bandwidth efficiency and enable the reuse of satellite frequencies across multiple customers. Industry analysts estimate that the frequency re-use technologies can deliver the same bandwidth at 80% to 90% less cost compared to traditional satellites employed by Intelsat.[21]

The only technological innovations Intelsat has been willing to execute have been in the form of fully funded hosted payloads for government related projects (e.g., the Internet Router In Space "IRIS" project). To date, these technologies have been only experimental in nature and do not offer any compelling capacity scalability or improved economics to the marketplace at large.

D. The FCC Should Initiate Comprehensive Reform of its Policies Governing the Assignment and Near Perpetual Rights of Use of Orbital Slots to Enable Innovation In International Satellite Communications

An underlying challenge for SNSPs is that Intelsat, and other satellite fleet operators, have indefinite control over their orbital slots. To retain these orbital slots when an active satellite approaches end of life, Intelsat will insert the equivalent of "space junk" into active orbital slots. This typically involves re-tasking an obsolete satellite into an orbital slot for which it was not designed. However, in many cases, the satellites are not capable of actually providing communications services or at least not enough to represent any significant marketable capacity.[22]

As a result of "orbital slot gaming," newer more efficient spacecraft technologies that could positively impact the currently tight supply condition, cannot make it to market. SNSPs

[22] Part of the financial value of a satellite fleet operator is derived from the orbital slots that it controls, even if those slots cannot be actively utilized by customers for communications services.

that are incented to lower space segment costs are foreclosed from securing access to orbit slots in their own names. To overcome this challenge and improve the overall competitive landscape for advanced bandwidth satellites, the FCC should revisit its policies for obtaining and retaining satellite orbital slots.[23] Orbital slots should be periodically assessed and licenses therefore made available to other prospective licensees in the event the holder of the orbital slot is not utilizing the scarce resource in an efficient manner.

Incumbent satellite fleet operators that are replacing existing satellites in existing orbital slots should be required to prove that the replacement satellites will add meaningful incremental bandwidth capacity over the coverage area. For example, if the total aggregate capacity of a retiring satellite is 40 transponders of 36 MHz each for a total of 1.4 GHz of capacity, then the replacement should be required to exceed that capacity by 50% increasing the total available bandwidth on the replacement satellite to be in excess of 2 GHz. The Commission has implemented spectrum enhancement strategies in other contexts, such as Part 90 narrow banding requirements applicable to private land mobile VHF and UHF radio systems,[24] and has proposed to make substantial spectrum available for wireless broadband by encouraging broadcasters to transmit video programming on as little as 3 MHz as opposed to the decades old 6 MHz channel.[25] Similar thoughtful regulatory approaches are desperately needed in order for

[23] *In the Matter of Amendment of the Commission's Space Station Licensing Rules and Policies and Mitigation of Orbital Debris*, 18 FCC. Rcd. 10760, First Report and Order and Further Notice of Proposed Rulemaking (*rel*. May 19, 2003) at ¶¶199-200. (The Commission's anti-warehousing policies focus solely on initial construction and launch of satellites, but do not address satellite end-of-life or orbital slot issues and therefore do little to promote or enhance long-term satellite spectrum utilization through deployment of more spectrum efficient technologies).

[24] *See*, *Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended, Promotion of Spectrum Efficient Technologies on Certain part 90 Frequencies*, Third Memorandum Opinion and Order, Third Further Notice of Proposed Rulemaking and Order, 19 FCC Rcd. 25045 (rel. Dec. 23, 2004).

[25] *See*, *Connecting America: The National Broadband Plan*, pp. 88-93 available at http://download.broadband.gov/plan/national-broadband-plan.pdf (last visited April 7, 2010).

innovation and much needed investment to generate the additional capacity required now and in the future for international satellite communications.

III. Conclusions and Recommendations

Over the last decade Intelsat was given approval by the Commission to consolidate its control over the global market-place (through the purchase of PanAmSat and Loral Skynet's North American Satellites), enter the U.S. Government Market (through the purchase of Comsat General and G2 Satellite Solutions (via the purchase of PanAmSat)), and delay its stock offerings as required in the ORBIT Act. These activities have contributed to Intelsat's current monopolistic behavior and market position, its current debt load, and its lack of investment in new capabilities and capacities.

Therefore, the Commission's Annual Report to Congress should report the ongoing, anti-competitive tactics of Intelsat and IGEN and note the adverse impact on thin-route U.S. Government and commercial customers. These tactics have and will continue to impact adversely the price, utility and operational benefits of international satellite service options available for essential U.S. Government requirements and the balance of the market for international fixed satellite services, particularly for thin-route markets.

Intelsat and IGEN's Forced Bundling of Intelsat transponder capacity in the CBSP procurement is unprecedented, far exceeding the anti-competitive practices of Comsat that drove the Commission's adoption of its *Direct Access* policy. In 2002 in approving the privatized Intelsat's acquisition of Comsat even though the Commission may have acknowledged the "similarly situated" qualification to the former INTELSAT's obligation of "equal access" to all Signatories and *Direct Access* customers,[26] the Commission clearly did not contemplate, nor

[26] *Lockheed/Comsat/Intelsat Order,* at ¶33.

would it have allowed, Intelsat and IGEN to impose the Forced Bundle on direct competitors of IGEN nor entertain their "Incumbency Pricing Policy" in connection with Federal Government purchases of satellite services. Anything short of immediate Congressional and Commission attention to these issues will inevitably lead to an even greater level of anti-competitive behavior by Intelsat and IGEN toward customers, such as CapRock, to the detriment of the U.S. Government and commercial customers requiring satellite services for their critical operations located in thin-route markets throughout the world.

More particularly, the Commission's Annual Report should recommend:

1. A comprehensive Commission and/or Congressional review of Intelsat/IGEN's continued participation in the SNSP tier of the satellite industry and the subsequent anti-competitive practices currently occurring.

2. A comprehensive Commission and/or Congressional review of the manner in which orbital slots suitable for international satellite communications are assigned and maintained, including appropriate "technology refresh" obligations for holders of these orbital slots.

Independent of its Report to Congress, the Commission should:

1. Initiate promptly an enforcement action against Intelsat and IGEN for imposing the Forced Bundle on IGEN's competitors in the Navy's CBSP procurement and implementing their Incumbency Pricing Policy in connection with an open government procurement. Intelsat has patently violated its commitment made in the *Lockheed Martin/Comsat/Intelsat* proceeding to make available, to competitors of Intelsat's affiliates, reasonable, non-discriminatory access to Intelsat space segment.

2. Initiate promptly a proceeding to establish suitable safeguards and procedures so that all requests for Intelsat satellite capacity must be lodged with an office of Intelsat S.A., which shall not disclose such requests for satellite transponder capacity to IGEN, Intelsat staff interacting with, providing services to or managing IGEN. IGEN must be isolated from Intelsat space segment supply inquiries and transactions made by unaffiliated entities with whom IGEN seeks to compete directly.

WHEREFORE, THE PREMISES CONSIDERED, the Commission should undertake these actions and other policies and rules consistent with the views expressed herein.

Respectfully submitted,

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April 7, 2010

EXHIBIT A

Department of Defense

Commercial Satellite Communications (COMMSATCOM) Service

Spend Analysis and Strategy Report

in response to

Section 818 of Public Law 109-163 – the National Defense Authorization Act for Fiscal Year 2006

June 7, 2006

Executive Summary Table of Contents

Spend Analysis and Strategy Report Table of Contents

Table of Figures

Table of Tables

EXECUTIVE SUMMARY

Introduction

Section 818 of Public Law 109-163 - the National Defense Authorization Act for Fiscal Year 2006 (NDAA 2006) directs that the Secretary of Defense perform a complete spend analysis of commercial satellite communications (COMMSATCOM) services used by the Department of Defense (DoD) from fiscal year 2000 through fiscal year 2005 and develop a strategy for acquiring commercial satellite communications services five months after enactment of the act.

This report documents the spend analysis and associated results. Additionally, this report defines a strategy for acquisition based on the spend analysis, that considers methods to aggregate purchases, leverage the buying power of DoD, and take advantage of multiyear contracting. Section 818 expands upon DoD's response to Section 803 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (NDAA 2005), which defined DoD's COMMSATCOM strategy by exploiting existing contracting mechanisms and offering an event-driven alternative to leverage a new acquisition if existing mechanisms are inadequate. The analysis completed for Section 818 is reflected in Figure ES-1.

Figure ES-1 Strategy Development Methodology

Spend Analysis And Results

The DoD spend analysis employed best practices from commercial spend analysis benchmarks. The quantity and type of data collected far exceeded the complexity of a typical spend analysis. Because of this complexity, off the shelf spend analysis software could not be used. Instead, a more appropriate, tailored model was used. Because the vast majority of costs derived from satellite bandwidth expenditures as shown in Figure ES-1, the spend analysis emphasized bandwidth.

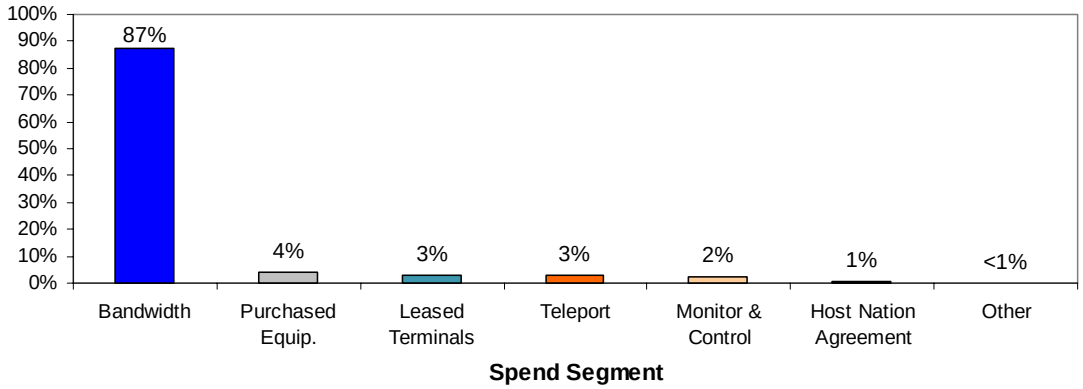


Figure ES-1 Total Segmented Spend FY00 through FY05

Bandwidth usage has increased significantly, driven by Operation Enduring Freedom (OEF)/Operation Iraqi Freedom (OIF) and adopting net-centric warfare. Figure ES-2 clearly shows the impact of OEF/OIF as bandwidth usage in the Middle East, the region of largest fiscal year 2005 DoD COMMSATCOM usage, has increased by a factor of 50 from fiscal year 2001 to 2005.

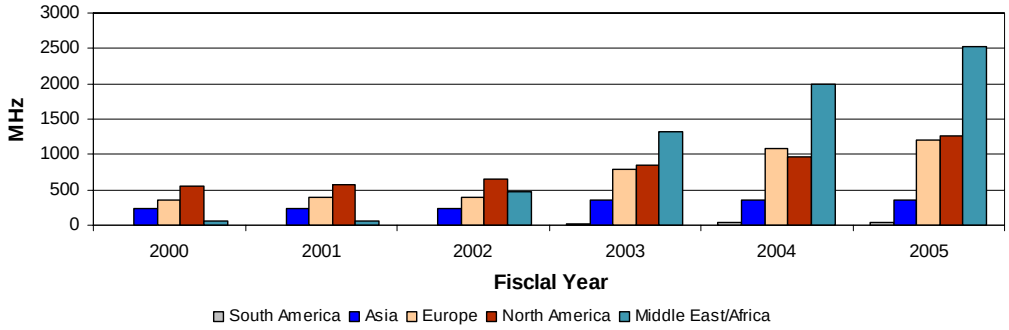


Figure ES-2 Bandwidth Usage by Region

Figure ES-3 and Figure ES-4 provide the most revealing result of the spend analysis. While bandwidth has grown significantly on Defense Information Systems Network (DISN) Satellite Transmission Services – Global (DSTS-G), the rates paid for bandwidth have decreased. This suggests DoD is leveraging buying power by centralizing procurements on a single contract. This consolidation naturally increases the scale of the relationships between satellite operators and vendors, which is a key price driver. As a result DSTS-G prices were 25 percent below industry averages in fiscal year 2005, consistent with DoD's position as a very large COMMSATCOM global buyer and DSTS-G being the largest single DoD contract vehicle. In contrast, average bandwidth prices for procurements outside of DSTS-G are higher. Figure ES-4 shows that while bandwidth consumption outside of DSTS-G has increased slightly, the average bandwidth price has remained relatively flat and more than 20 percent above industry averages. Analysis also validated the correlation between the amount of bandwidth

procured between a vendor and a satellite operator and a corresponding reduction in bandwidth price.[1]

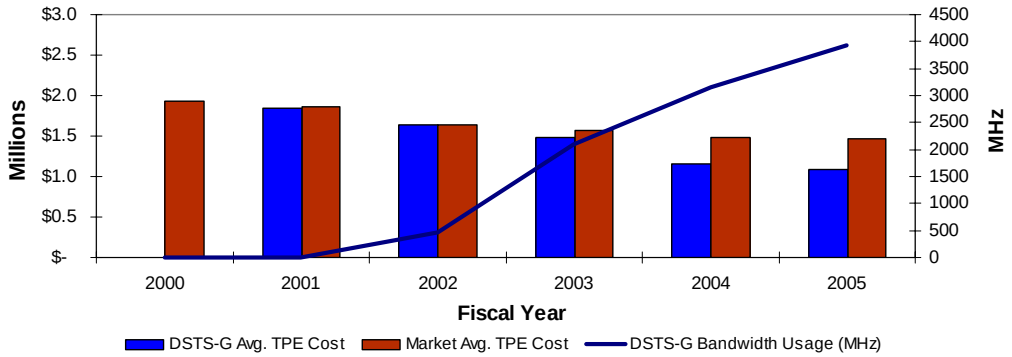


Figure ES-3 DSTS-G Transponder Equivalent Cost & Bandwidth Usage

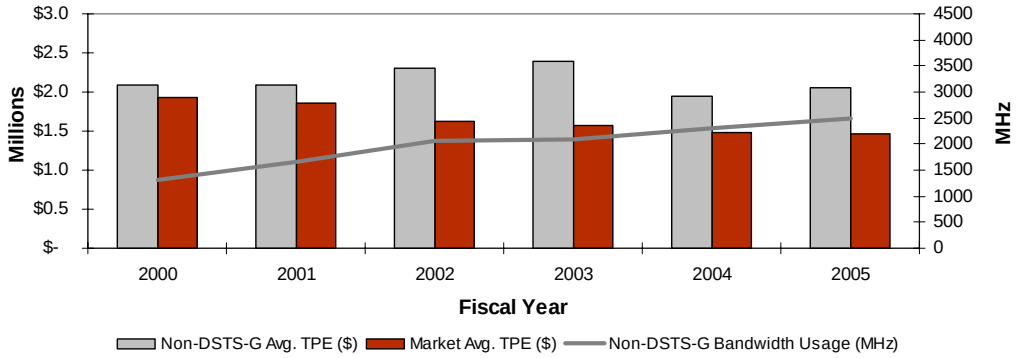


Figure ES-4 Non-DSTS-G Transponder Equivalent Cost & Bandwidth Usage

Figure ES-5 compares DSTS-G average prices to global market average prices and clearly shows that DSTS-G price declines outpaced those of the overall market. This suggests factors beyond market declines have contributed to DSTS-G price reductions.

[1] Derived from multiple sources: Euroconsult, 2003, 2005; Frost & Sullivan, 2002, 2003, 2004, 2005; Northern Sky Research, 2005, and DISA Analysis (See Appendix F for detailed references)

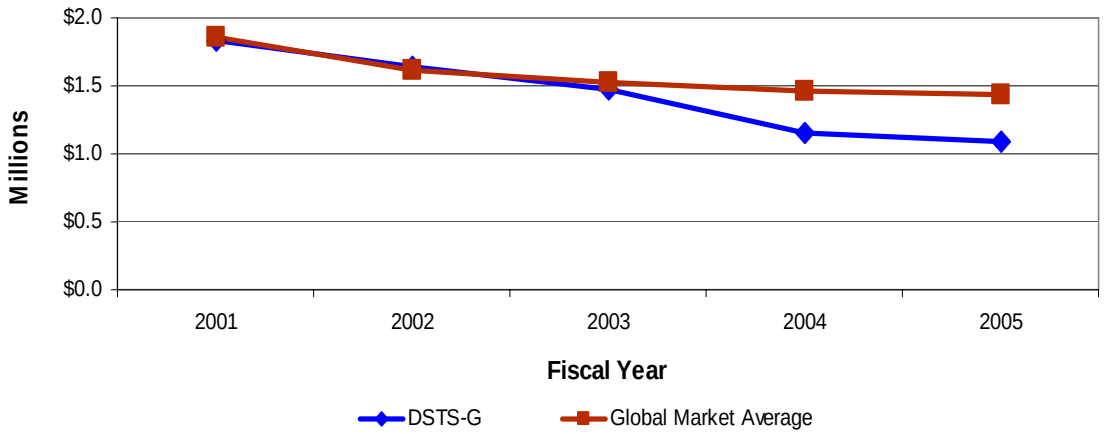


Figure ES-5 DSTS-G Average Transponder Prices vs. Global Market Average Transponder Prices

While DoD is leveraging purchasing power through DSTS-G, almost 40 percent of COMMSATCOM bandwidth was procured outside of DSTS-G in fiscal year 2005. If all of this bandwidth were priced with DSTS-G average bandwidth prices, the DoD as a whole would have spent less. Accordingly, DoD will continue to enforce its existing policy to centralize COMMSATCOM procurement through the Defense Information Systems Agency (DISA) to leverage DoD's buying power.

The pricing of satellite bandwidth is very complex and dependent upon many factors. It is not priced entirely as a commodity with prescribed rates. The actual price paid depends upon macro economic utilization factors (e.g., frequency band, geographic location), micro economic utilization factors (e.g., occupancy rate of the satellite), internal business factors (e.g., company's cash flow, cost to build the satellite), and other factors (e.g., supply and demand, type of contract), and service variations (e.g., restoration scheme, preemption scheme). As a result, DSTS-G's highly competitive and individualized construct has allowed individual requirements to be served by the most opportune solution available from industry. DoD will continue to exploit this construct while considering additional means to leverage buying power such as consolidation of requirements. However, consolidation should be applied strategically to not jeopardize existing DSTS-G benefits such as market opportunities aligning with a specific DoD need. Similarly, almost half of DSTS-G's bandwidth for fiscal years 2000 through 2005 was provided by a regional satellite operator that at times has provided DoD extraordinarily low prices but would be unable to bid on a global aggregated task order requiring service outside its coverage area. Accordingly, DoD will exploit opportunities to consolidate task orders that do not limit competition.

Multiyear Analysis

Multiyear contracting was another key point considered. Analysis verified that DoD can enter into multiyear contracts under General Services Administration (GSA) delegated authority and is doing so for a number of DSTS-G requirements. Consequently, DoD will apply this authority in a more deliberate fashion to maximize multiyear benefits.

While multiyear contracts can offer a savings of up to 15 percent on a five-year contract, feedback from industry suggests that DoD is not likely to realize savings this great for two reasons. First, DoD already receives discounts as a strategic customer and consistently exercises option years in multiple year contracts. More important, DoD receives extensive discounts from other means, such as competitive procurements and leveraging buying power. As illustrated in Figure ES-1, satellite operators are not inclined to sell bandwidth at a loss, so as more and more discounting factors are included, individual discounting percentages begin to constrict each other.

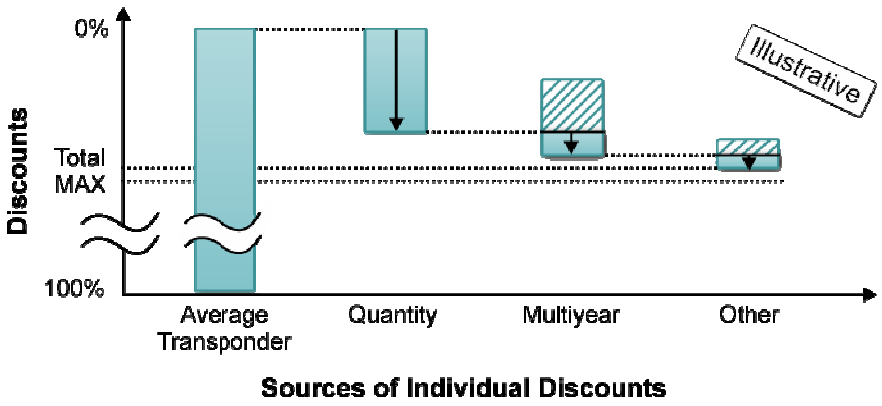


Figure ES-1 Effects of Individual Discounts on Total Discount

In fact, actual DoD empirical experience illustrated in Figure ES-2 shows that costs vary significantly both above and below a projected algorithmic pricing curve that was derived from satellite operator multiyear rate card information. This is because of the host of pricing variables previously mentioned have impacted individual task orders differently.

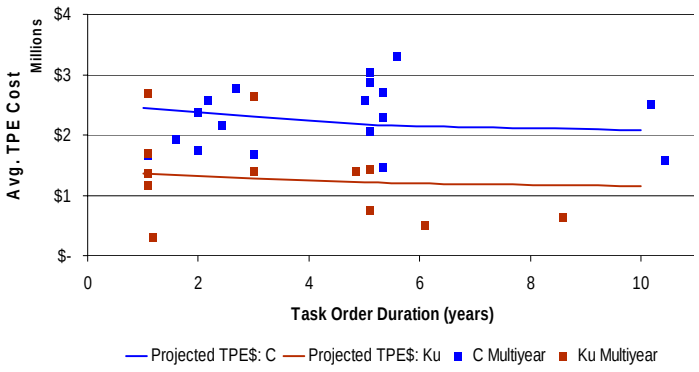


Figure ES-2 DoD Multiyear Contracts Comparison

To determine when and how to leverage multiyear contracting, DoD has defined a process to identify and vet the financial risk and reward of multiyear contracts for long-term requirements and to vet any pre-positioned capacity to save money. In general, DoD will exercise good Government practices to systematically pursue multiyear

contracting for all long-term, stable, funded requirements, and pre-positioned capability (when a requirement is validated), but not for contingency or short-term requirements. Dual competitive pricing will be obtained to ensure that the rewards outweigh the risks. Such a multiyear strategy has the added benefit of assured access to critical bandwidth over the duration of the contractual relationship.

DoD Strategy and The Way Ahead

In summary, the spend analysis has validated the current strategy outlined in DoD's response to Section 803 of the NDAA 2005 to leverage DoD's buying power to improve COMMSATCOM costs. Ongoing and future acquisition of COMMSATCOM services will be evaluated in the context of this strategy. Additionally, the Section 803 response strategy calls for improving the DSTS-G operational effectiveness by adding newly validated warfighter capabilities and improving processes and provisioning timeliness. Improvements to capabilities, processes, and timeliness are the focus of ongoing efforts by DoD.

DoD does not currently require a new contract to support the acquisition of COMMSATCOM services because the DSTS-G contract vehicle clearly leverages DoD purchasing power. Similarly, DoD does not currently require legislative action to employ multiyear contracting vehicles in support of COMMSATCOM services acquisition requirements, but DoD intends to use existing GSA-delegated authority to meet the DoD's range of multiyear needs.

Moving forward, DoD will continue to evaluate its COMMSATCOM expenditures to compare against market averages. This will provide opportunities to continue to ensure DoD is leveraging its buying power. In addition, as described in DoD's response to Section 803 of the NDAA 2005, DoD will continue to examine how best to craft a successor contract and enter into Phase 2 of the COMMSATCOM strategy once DSTS-G reaches the end of its useful life or fails to meet DoD needs.

Department of Defense

Commercial Satellite Communications (COMMSATCOM) Service

Spend Analysis and Strategy Report

in response to

Section 818 of Public Law 109-163 – the National Defense Authorization Act for Fiscal Year 2006

June 7, 2006

1 INTRODUCTION

Section 818 of Public Law 109-163 - the National Defense Authorization Act for Fiscal Year 2006 (NDAA 2006) directs that the Secretary of Defense to perform a complete spend analysis of all commercial satellite communications services acquisitions by the DoD from fiscal year 2000 through fiscal year 2005. The law also directs the Secretary of Defense to use the directed analysis to develop a revised strategy for acquiring commercial satellite communication services five months after enactment of the act. This report provides:

- A description of spend analysis and associated results; and,
- A strategy for acquisition based on the results of the spend analysis, that considers methods to aggregate purchases, leverage the buying power of the Department, and the value of multiyear contracting.

2 BACKGROUND

2.1 Commercial Satellite Communications Use in DoD

Assured communications capabilities are critical for the success of military operations conducted in support of the National Military Security Strategy, ranging from humanitarian relief to the full spectrum of warfare. Military forces are dependent on space-based communications systems to access essential information services to support land, sea, air, and space operations. The DoD currently uses military satellite communications (MILSATCOM) and commercial satellite communications (COMMSATCOM) to meet its global deployed telecommunications requirements.

In recent years, the quantity of DoD's satellite communications (SATCOM) requirements has increased significantly. As a result, the DoD has steadily increased its use of COMMSATCOM bandwidth and services to support a multitude of military operations. DoD estimates that COMMSATCOM systems provided approximately 80 percent of the satellite bandwidth supporting the Global War on Terror (GWOT). This is a significant increase from the 20 percent used in Desert Storm. Figure 2-1 illustrates the growth in DoD COMMSATCOM expenditures and bandwidth usage for fiscal years 2000 through 2005.

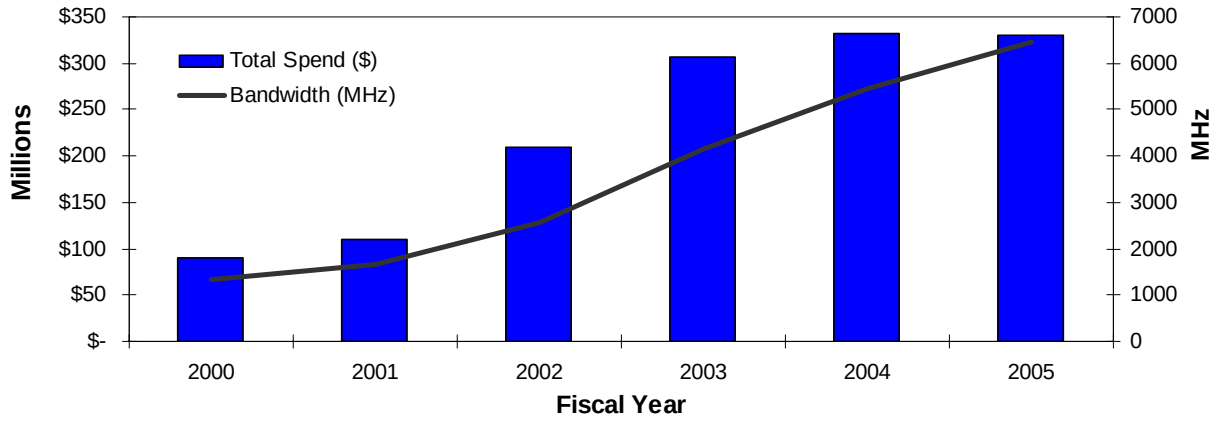


Figure 2-1 Growth in COMMSATCOM Expenditures and Bandwidth Usage

2.2 DoD Response to Section 803 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year (2005)

Section 803 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (NDAA 2005) required the Secretary of Defense to review all potential mechanisms for procuring commercial satellite communications services and provide guidance on how such procurements should be conducted. The report was required to include a discussion of the rationale for that guidance and how the guidance would address each recommendation made in the December 2003 Government Accountability Office (GAO) report entitled *SATELLITE COMMUNICATIONS – Strategic Approach Needed for DoD's Procurement of Commercial Satellite Bandwidth.*

In DoD's report to Congress, dated 29 July 2005, a two-phased strategic approach for the planning, acquisition, and management of commercial Fixed Satellite Service (FSS) was suggested as described below.

Phase 1:

- Improve operational effectiveness of the Defense Information Systems Network (DISN) Satellite Transmission Service – Global (DSTS-G) contract vehicle by incorporating changes to Defense Information Systems Agency (DISA) processes to improve responsiveness and aggregate bandwidth to reduce cost
- Pursue warfighter requirements within the scope constraints of the current contracts

Phase 2:

- Examine how best to craft successor a contract intended to:
    - Meet the full range of warfighter requirements as defined by the Net-Centric Functional Capabilities Board (NC FCB)
    - Enable cost savings of bandwidth aggregation
    - Leverage lessons learned from DSTS-G operational effectiveness modifications

DoD has continued to make progress against this two-phased approach. In November 2005, DoD garnered valuable information from commercial satellite industry executives about their service and system capabilities at the DISA COMMSATCOM Capabilities-Focused Industry Days. In February 2006, the Net-Centric Function Capabilities Board (NC FCB) formally endorsed a set of capabilities for COMMSATCOM, enabling DoD to begin the DSTS-G modification process. Additionally, DoD began improving provisioning processes through a formal business process review. DoD will continue to exercise due diligence as it continues to improve service to the joint warfighter.

2.3 DoD Requirements Stratification

Use of commercial bandwidth is impacted by the volatile nature of DoD's requirements as driven by dynamic geopolitical situations. To consider this volatility when planning for DoD's use of commercial bandwidth, the Assistant Secretary of Defense (Networks & Information Integration (ASD(NII)) developed a planning strategy, consisting of three separate layers, as part of the 14 December 2004 Policy for the Planning, Acquisition, and Management of Commercial Satellite Communications Fixed Satellite Services (FSS). By stratifying requirements as stable or unstable as well as long-term or short-term in nature, DoD is in a position to better recognize risk and reward to best leverage buying power and negotiate the most appropriate contract terms. The characteristics of the three layers are as follows:

- **Layer 1 - Well-defined, long-term requirements** – These requirements are the most stable and easy to predict and are less influenced by crisis scenarios and changing operation plans (OPLANs). Examples of long-standing Layer 1 requirements are those associated with Air Force Satellite Control Network (AFSCN), and Armed Forces Radio and Television Service (AFRTS).

- **Layer 2 - Pre-positioned Capacity** – These requirements are directly related to DoD strategic planning and tend to be oriented toward geographic theaters. This layer focuses on pre-positioning SATCOM capacity over critical geo-locations.
- **Layer 3 - Surge Requirements** – This category includes surge capacity that might be needed to support unplanned crises. This layer is hardest to predict and is above and beyond Layers 1 and 2.

To implement this layered approach, the Joint Staff (J6) has revised the current satellite communications requirements process, as it relates to Commercial SATCOM FSS, to align with the three-layered approach discussed above. The form and format DoD uses to characterize SATCOM requirements in the Satellite Database (SDB) have been revised so that commercial SATCOM requirements are specifically identified according to the layering strategy. In addition, rules have been developed to filter all SATCOM requirements in the SDB to determine candidates for commercial SATCOM based on definable criteria.

SATCOM users, including the Combatant Commands (COCOMs) as well as the Military Services and other Defense agencies, are submitting their updated requirements to the SDB according to the new format. This process occurs periodically (annually or more frequently if required) with validation of the requirements performed by the Joint SATCOM Panel, chaired by the Joint Staff J6.

3 NDAA 2006, SECTION 818 LANGUAGE TRACEABILITY

Table 3-1 lists the specific NDAA requirements levied on DoD by paragraph number and references where each requirement is addressed within this report.

Table 3-1 NDAA 2006 Section 818 Requirements to Report Mapping

Section 818 Paragraph	Section 818 Requirement	Report Section(s)
(a)	(a) Requirement for Spend Analysis- The Secretary of Defense shall, as a part of the effort of the Department of Defense to develop a revised strategy for acquiring commercial satellite communication services, perform a complete spend analysis of the acquisitions by the Department of commercial satellite communication services for the period from fiscal year 2000 through fiscal year 2005. That analysis shall, at a minimum, include a determination of the following:	4.3
(a)(1)	Total acquisition costs in aggregate, by fiscal year, for items and services purchased.	4.3.4.1
(a)(2)	Total quantity of items and services purchased.	4.3.4.1
(a)(3)	Quantity and cost of items and services purchased by each entity from each supplier and who used the items and services purchased.	4.3.4.2, 4.3.4.3
(a)(4)	Purchasing patterns that may lead to recommendations in which the Department of Defense may centralize operations, consolidate requirements, or leverage purchasing power.	4.3.4.4, 4.3.4.5
(b)(1)	Not later than five months after the date of the enactment of this Act, the Secretary shall submit to Congress a report on the acquisition strategy of the Department of Defense for commercial satellite communications services.	5
(b)(2)(A)	A description of the spend analysis required by subsection (a), including the results of the analysis.	4.3
(b)(2)(B)	The proposed strategy of the Department for acquiring commercial satellite communication services, which-- (i) shall be based in appropriate part on the results of the analysis required by subsection (a); and (ii) shall take into account various methods of aggregating purchases and leveraging the purchasing power of the Department, including through the use of multiyear contracting for commercial satellite communication services.	4.3, 4.4, 4.5, 5
(b)(2)(C)	A proposal for such legislative action as the Secretary considers necessary to acquire appropriate types and amounts of commercial satellite communications services using methods of aggregating purchases and leveraging the purchasing power of the Department (including the use of multiyear contracting), or if the use of such methods is determined inadvisable, a statement of the rationale for such determination.	5.1
(b)(2)(D)	A proposal for such other legislative action that the Secretary considers necessary to implement the strategy of the Department for acquiring commercial satellite communication services.	5.1

4 STRATEGY DEVELOPMENT

4.1 Objective

DoD's current strategy for acquiring COMMSATCOM services is documented in the DoD response, dated 29 July 2005, to Section 803 of the NDAA 2005. The spend analysis, directed by Section 818 of the NDAA 2006, provides further input to the COMMSATCOM acquisition strategy that was documented in DoD's response to Section 803 of the NDAA 2005. As directed by Section 818, DoD has explored refinements to that strategy based on the results of the spend analysis, taking into account the various methods of aggregating purchases, leveraging the purchasing power of the Department, and recommending potential legislative changes that enable better capitalization on the benefits of multiyear contracting.

4.2 Methodology

The methodology for crafting a refined DoD strategy for acquiring COMMSATCOM services is depicted in Figure 4-1 below.

Figure 4-1 Strategy Development Methodology

Each phase of the strategy analysis is described in the following sections. The spend analysis detailed methodologies are provided in Appendix A.

4.3 Spend Analysis

Spend analysis is a tool used by the private sector and recently adopted by the Government to provide an organization with insight into who within an organization is buying what, from whom, and for how much.

The private sector typically develops a corporate top-down approach to identify, extract, and organize relevant data automatically. The essential data typically is culled from invoices, purchase orders, accounts payable, and other sources. This data is first reviewed to ensure accuracy and completeness. Next, it is organized into a logical and comprehensive set of elements (such as commodities and suppliers) and then analyzed. The resulting insights can be used to identify opportunities to support decisions on sourcing and procurement management in areas such as cost cutting, streamlining operations, and supplier reduction. The private sector has been successful using spend analysis to develop sourcing strategies, often resulting in significant cost savings, managed risk, and simplified procurements. More specifically, spend analysis is used to reveal methods of supplier reduction, equipment standardization and reuse, financial and operational risk identification, and vulnerabilities to market dynamics.

Government organizations have started to adopt commercial spend analysis best practices to improve their procurements. However, the Government faces many unique challenges because of its large and complex need for a range of services, the fragmentation of spending data across multiple non-standardized information systems, and the inconsistent documentation of data across units within the Government. In addition, unlike industry, the Government must concern itself with other unique considerations that may constrain the application of spend analysis, such as maintaining an industrial supply base, maintaining fair and open competition, complying with acquisition regulations, and supporting small business objectives.

While executing a COMMSATCOM spend analysis, DoD carefully identified objectives, defined scope, and developed a methodology consistent with industry benchmarks and best practices.

4.3.1 Objective

The objective of this spend analysis activity was to provide a Department-wide view of COMMSATCOM spending as a means to explore modifications to the DoD's COMMSATCOM acquisition strategy, including leveraging the buying power of the Department.

Specifically, the spend analysis, using the methodology shown in Figure 4-2, identified:

- Total acquisition costs in aggregate, by fiscal year, for items and services purchased
- Total quantity of items and services purchased
- Quantity and cost of items and services purchased by each entity from each supplier and who used the items and services purchased
- Purchasing patterns that may lead to recommendations in which the Department of Defense may centralize operations, consolidate requirements, or leverage purchasing power

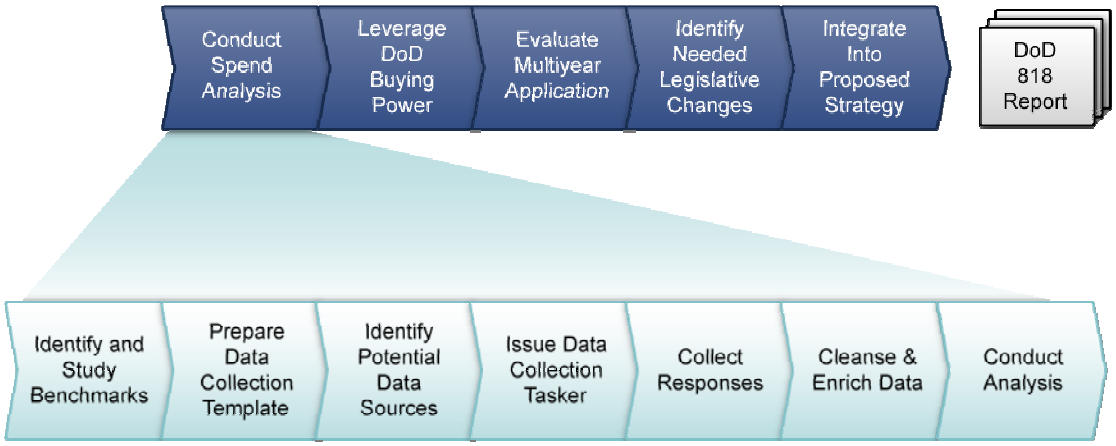


Figure 4-2 Spend Analysis Methodology

4.3.2 Scope

The following defines the scope of this spend analysis:

- The period of interest included fiscal year 2000 through fiscal year 2005. The amount of services acquired prior to fiscal year 2000 was prorated to include the period of performance extending into fiscal year 2000. Additionally, the prorated amount of services acquired prior to the end fiscal year 2005 with a period of performance extending past fiscal year 2005 was included.
- Only commercial FSS items and services were considered. Commercial Mobile Satellite Services (MSS) such as Inmarsat, Globalstar, and Iridium were not considered, consistent with previous congressional, GAO, and ASD(NII) focus. (Hereafter, COMMSATCOM will mean FSS COMMSATCOM only.)

4.3.3 Data Gathering

The DoD was diligent in its approach to data gathering, making every effort to reach the appropriate parties and capture the appropriate spending information. DoD used the DD Form 350 database as a means by which to establish an initial set of potential data sources for COMMSATCOM expenditures. DD Form 350 database queries identified 1,592 potentially relevant DoD COMMSATCOM contracts and identified actions against those contracts by 304 different contracting organizations within DoD. Other data sources, such as the INPUT database, were used to cross-correlate additional information and to pinpoint personnel to contact within each contracting organization. Ultimately, 237 contracting offices were directly mailed the data-collection tasker attached in Appendix G. Additionally, the data-collection tasker was disseminated to the Secretaries of Military Departments, Directors of Agencies, Commanders of COCOMs, and to the top contracting offices identified in the DD Form 350 database queries. Individual follow-up with each contract's point-of-contact allowed necessary refinements to occur while ensuring that the broadest set of DoD COMMSATCOM expenditures was identified. More specifics on the data gathering process are outlined in Appendix A.

As a result of this multilateral approach to the data-call, more than $1.7 billion in relevant FSS COMMSATCOM spend was captured. Of this, a prorated amount of nearly $1.4 billion fell within the fiscal year 2000 through fiscal year 2005 time frame. The exact amounts captured are contained in Table 4-1.

Table 4-1 Total Spend Captured

Total Spend Captured	$1,710,158,183
FY00 – FY05 Spend Captured	$1,378,473,440

The contracting offices that responded to the data-call were responsible for more than 90 percent of potential spend identified in the DD Form 350 search. This response rate, as a percentage of total potential expenditures, indicates effective penetration of the data-call request and a high degree of completeness in the collected data.

4.3.4 Data Analysis

All analyses conducted supported one of three high-level spend analysis activities prescribed by Section 818 of the NDAA 2006:

- Calculating spend by fiscal year, buying entity, and supplier
- Calculating quantities by fiscal year, buying entity, and supplier
- Identifying purchasing patterns leading to recommendations

The results of each of these activities are captured in the following sections. Terminology used throughout the following discussion is outlined in Appendix B.

The challenge with COMMSATCOM data analysis is the strong influence of technical elements (e.g., spectrum band, satellite, region, orbit type) on costs. While typical spend analysis includes mainly administrative (e.g., buyer, supplier, buying mechanism) and cost (e.g., price, quantity, product) elements, COMMSATCOM data analysis required 44 data elements to provide a complete basis for segmentation and analysis. This analysis was too complex for any commercial spend analysis products surveyed, in part, because it could potentially include billions of calculations. To remedy these challenges, a custom model was developed that intelligently focused analysis where the greatest opportunities for strategic improvements, such as savings, were available. Much of this model focused on bandwidth expenditures because, as shown in Figure 4-3 and Figure 4-4, 87 percent of all COMMSATCOM expenses were directed to pay for satellite bandwidth. Other cost elements, such as Purchased Equipment, Monitor & Control and, Host Nation Agreements, included far less expenditures.

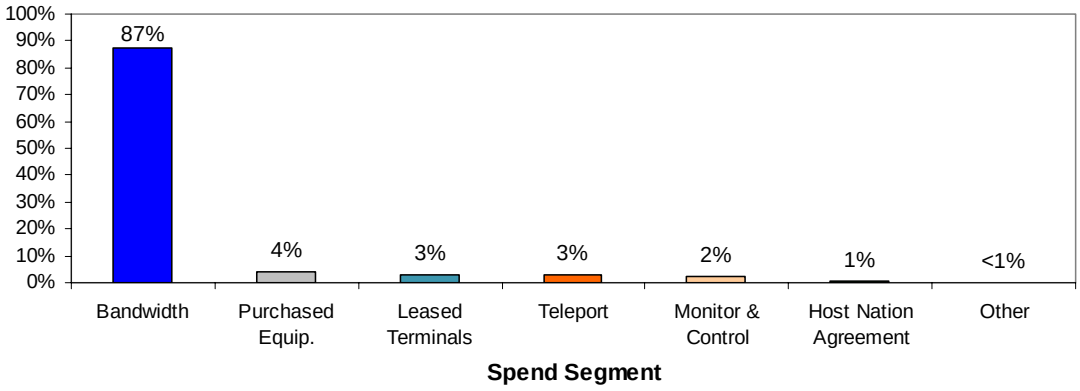


Figure 4-3 Total Segmented Expenditures FY00 through FY05

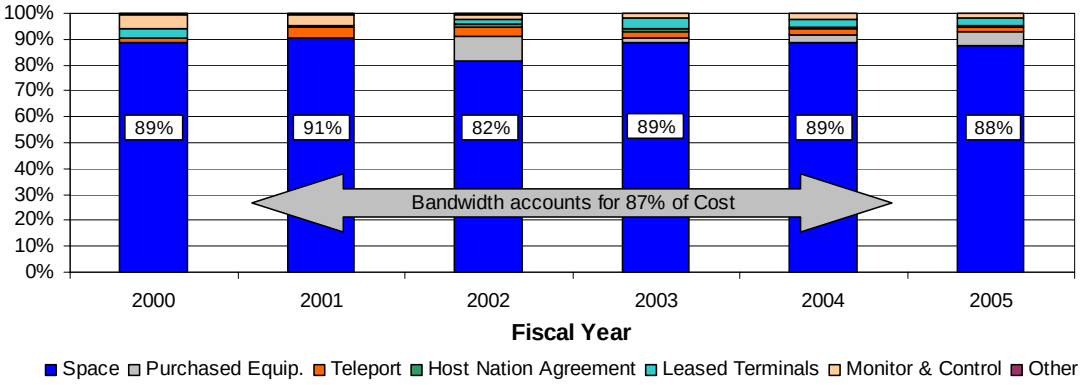


Figure 4-4 Total Expenditures by Fiscal Year

While Appendix E provides a full set of graphics depicting the analysis required for Section 818, the following subsections focus on the key analyses providing an over-arching assessment of expenditures (cost and quantity) and then articulate the specific purchasing patterns that build up to the recommendations and strategy in the remainder of this report.

4.3.4.1 Procurement by Fiscal Year

Figure 4-5 depicts total DoD COMMSATCOM procurements for fiscal years 2000 through 2005. Total usage was consistent with geopolitical circumstances. COMMSATCOM usage jumped to elevated levels in fiscal year 2002 and beyond, in support of GWOT, specifically Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). Indicative of these circumstances, total usage experienced a compound annual growth rate (CAGR) of 37 percent over the six-year period of this analysis; however, the CAGR between fiscal years 2001 and 2003 was significantly higher, 58 percent, indicative of the sudden ramp-up of COMMSATCOM usage in support of GWOT immediately following fiscal year 2001. Concurrently with usage, expenditures have also experienced a large increase, realizing a CAGR for fiscal years 2000 through 2005 of 29 percent, shown in Figure 4-5.

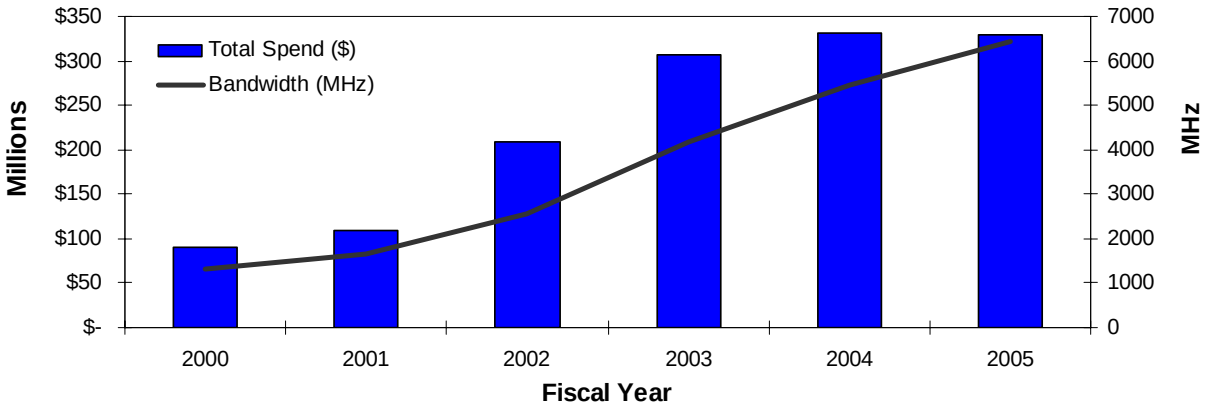


Figure 4-5 Total Bandwidth Usage and Total Expenditures

In recent years, namely between fiscal years 2003 and 2005, the total bandwidth usage for DoD has continued to grow with a CAGR of 24 percent. However, expenditures for DoD have flattened to a CAGR of less than four percent during this time frame. This reflects a significant decrease in bandwidth prices for DoD. Because of the predominance of bandwidth costs driving COMMSATCOM expenditures, DoD is shown to be buying at increasingly better prices. This is assessed in further detail in Section 4.3.4.5.

4.3.4.2 Procurement by Buying Entity

To better understand the source of user demand, the spend analysis determined each buying entity's percentage of total expenditures and bandwidth procured, respectively, for fiscal years 2000 through 2005. This is reflected in Figure 4-6 and Figure 4-7. Customers grouped as "Other Defense" either individually purchased negligible bandwidth or were not explicitly disclosed to ensure this report remains unclassified. These buying entities are the ultimate bill payers/users of the procured services.

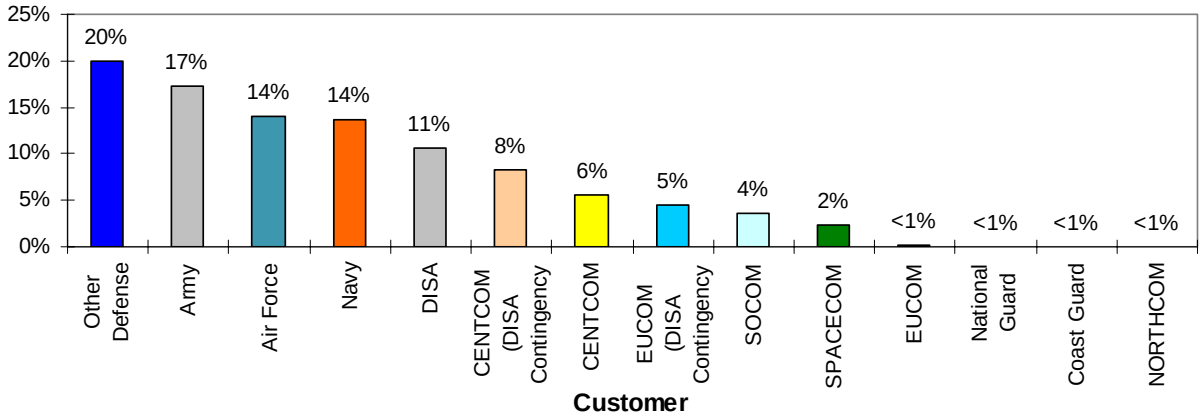


Figure 4-6 Total Expenditures by Customer FY00 through FY05

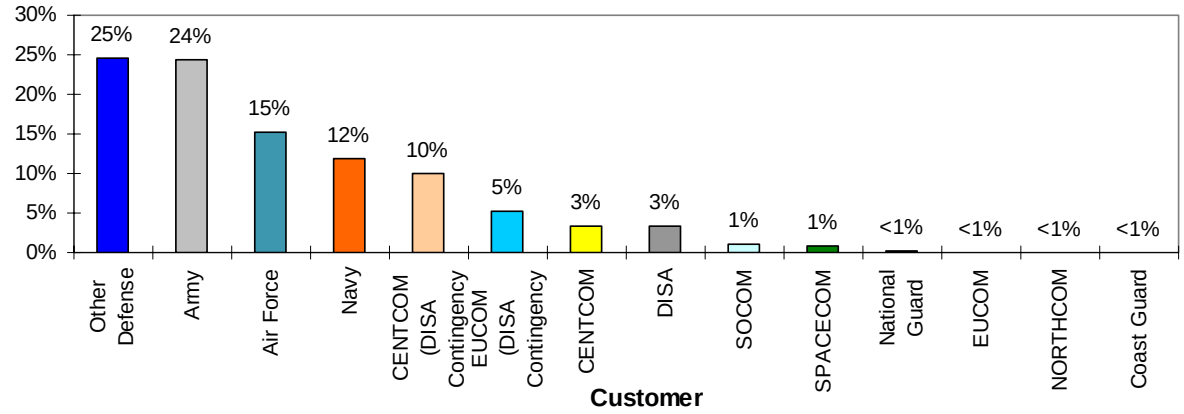


Figure 4-7 Bandwidth Usage by Customer FY00 through FY05

Together, the Army, Air Force, and Navy procured more than 51 percent of total COMMSATCOM bandwidth for fiscal years 2000 through 2005. In addition, COCOM contingency operations funded by DoD through DISA in support of OEF and OIF accounted for another 15 percent of total bandwidth used over the six-year period. DISA's funding for reachback to connect remote locations to the Defense Information Systems Network (DISN) accounted for another 11 percent of total bandwidth used.

4.3.4.3 Procurement by Supplier

While bandwidth usage was highly concentrated among specific Combatant Command/Service/Agencies (CC/S/As), as discussed above, this bandwidth was procured through a host of vendors. Respondents identified 34 different vendors, defined as integrators or bandwidth resellers, in data submissions. Figure 4-8 and Figure 4-9 show the percentage of expenditures and bandwidth attributed to each vendor as a percentage of totals for fiscal years 2000 through 2005. The attributed spend percentages represent the dollar value of business conducted through each vendor; however, as determined in the cost analysis in response to Section 803, the vast majority of cost goes to satellite operators for bandwidth. Specific vendor names were replaced with generic lettering to help protect proprietary performance of individual vendors—specific vendor names are not pertinent to this analysis.

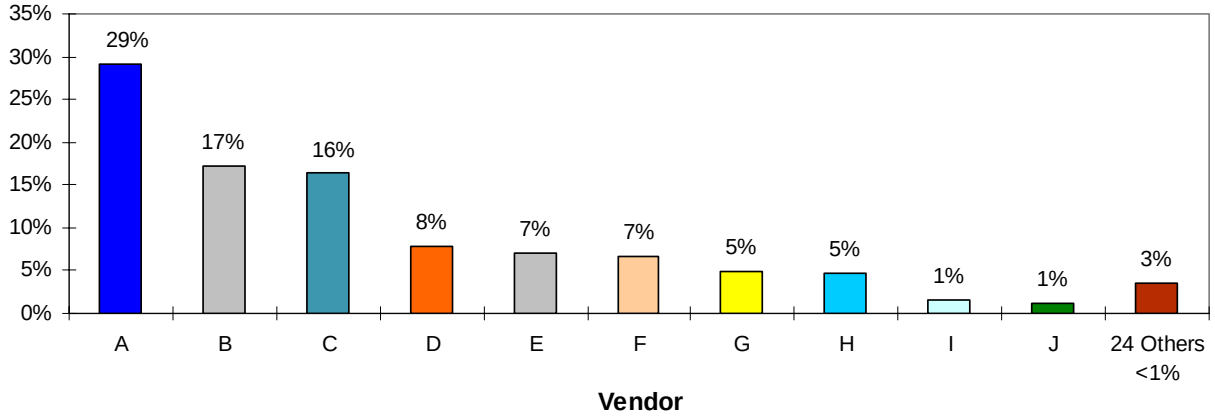


Figure 4-8 Total Expenditures by Vendor FY00 through FY05

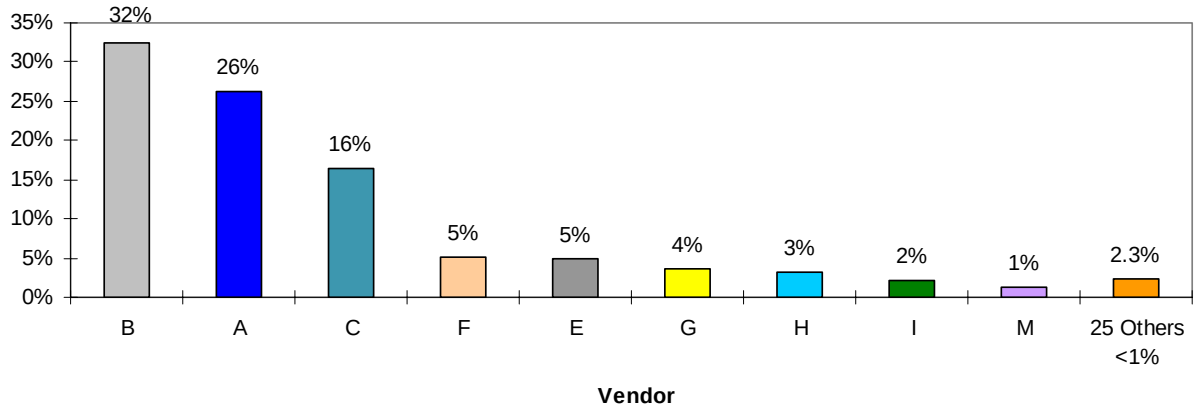


Figure 4-9 Bandwidth Usage by Vendor FY00 through FY05

The vast majority of COMMSATCOM expenditures during the period of interest involved the four Managed Transponder Contract (MTC) and DSTS-G vendors (bars A, B, C, and E from Figure 4-8 and Figure 4-9). The same set of vendors was responsible for a larger percentage of provisioned bandwidth. This concentration of vendor business is indicative of DoD's policy to centralize procurement of COMMSATCOM through a single contract (the original central contract, MTC, was phased out through 2005 after DSTS-G began in 2001). Outside of these large contract vehicles, DoD customers have executed many smaller purchases through a variety of Basic Order Agreement (BOA), Firm Fixed Price (FFP), and Indefinite Delivery Indefinite Quantity (IDIQ) contracts, through a host of different intermediaries (26 additional); however, these other mechanisms comparatively are extremely small and individualized.

Seven uniquely defined satellite bandwidth providers (i.e., satellite operators) were included in respondents' data. In addition, respondents were offered the option to either categorize the bandwidth provider as "other" to indicate a satellite operator not specifically identified, or to leave the field blank, indicating an unknown satellite operator; however, very little bandwidth was attributed to this category. Figure 4-10 and Figure 4-11 clearly show that two operators combined have received 72 percent of the DoD commercial bandwidth expenditures and supplied 76 percent of DoD bandwidth used for fiscal years 2000 through 2005. This supplier concentration is enhanced initially by opportunistic alignment of specific satellite operators' systems and business needs with specific DoD mission needs. As a satellite operator builds business with a DoD vendor, the progressively larger discounting that results may provide progressively greater competitive cost advantages for subsequent proposals. Specific operator names were replaced with generic lettering to help protect proprietary performance of individual operators—specific operator names are not pertinent to this analysis.

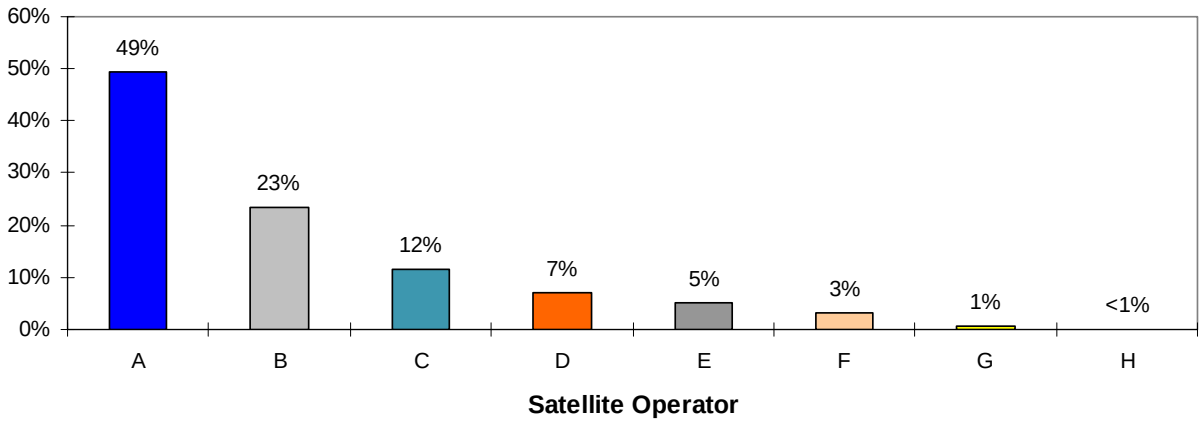


Figure 4-10 Bandwidth Expenditures by Operator FY00 through FY05

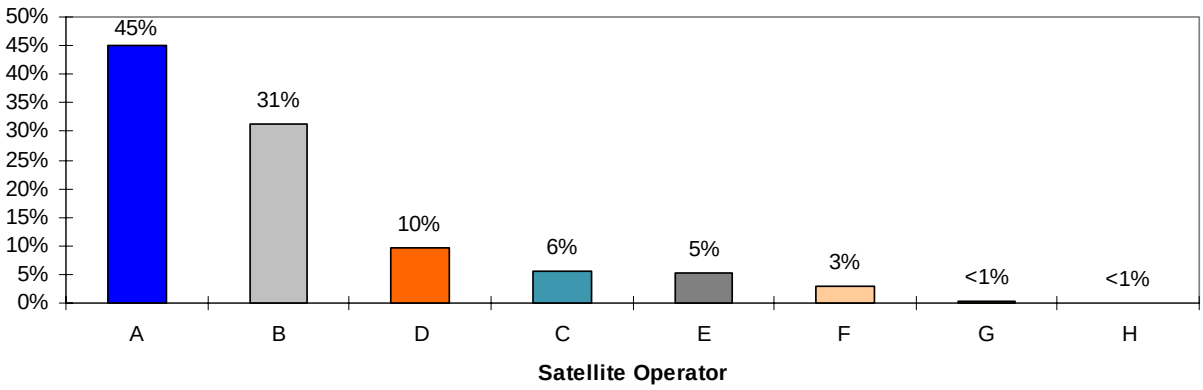


Figure 4-11 Bandwidth Usage by Operator FY00 through FY05

4.3.4.4 Purchasing Patterns – Regions and Spectrum Bands

Market analysis from various sources referenced in Appendix F suggests that pricing varies significantly between regions (by up to 70 percent) and between spectrum bands (by more than 100 percent). In addition, significant changes in missions directly affect both of these elements. As such, much of the spend analysis included expenditures that were segmented by these two elements.

As shown in Figure 4-12 and Figure 4-13, most of DoD's bandwidth resided in the Middle East in fiscal year 2005. This was driven by OEF/OIF, which also drove increases in North American bandwidth as needed to provide reachback connectivity between the United States and the Middle East. In the analysis, inter-regional bandwidth was evenly divided between transmit and receive regions.

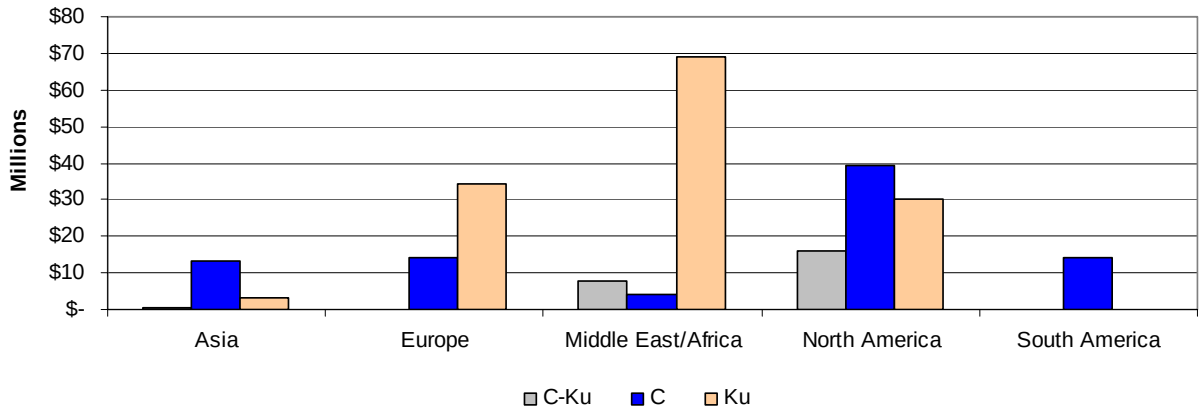


Figure 4-12 Total Expenditures by Region and Band – FY 2005

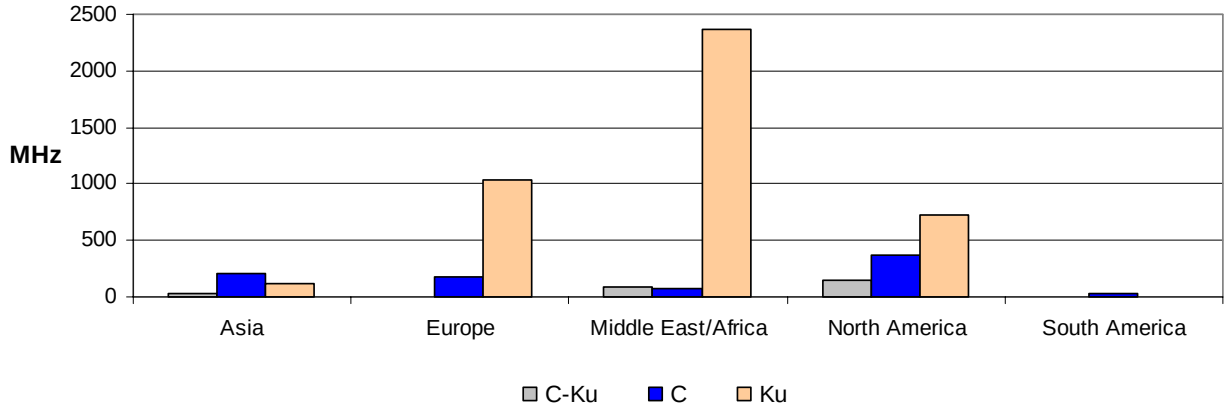


Figure 4-13 Bandwidth Usage by Region and Band – FY 2005

Figure 4-14 and Figure 4-15 clearly show the impact of OEF/OIF by breaking out annual expenditures. Bandwidth usage in the Middle East, which we previously showed was the largest region of DoD bandwidth usage, grew by a factor of 50 from fiscal year 2001 to fiscal year 2005. In comparison, regions other than Middle East and North America clearly have experienced much more modest growth,

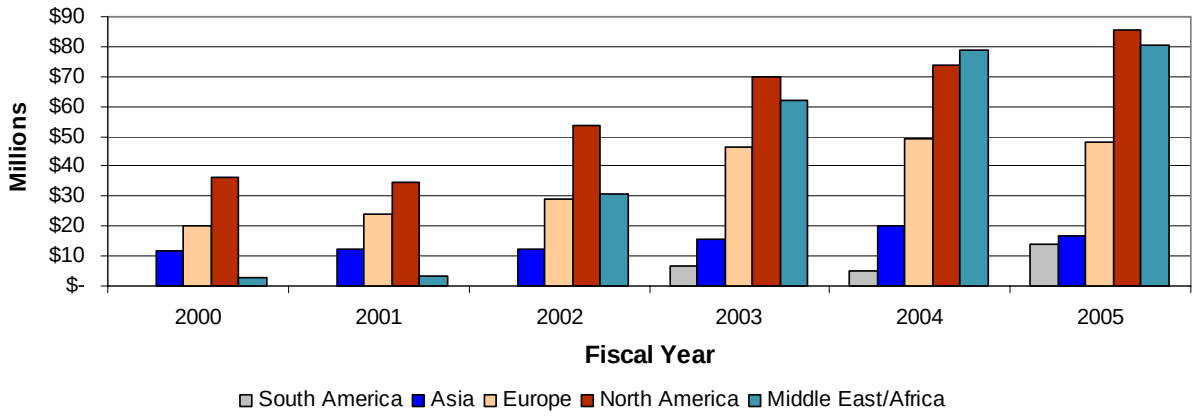


Figure 4-14 Total Expenditures by Region

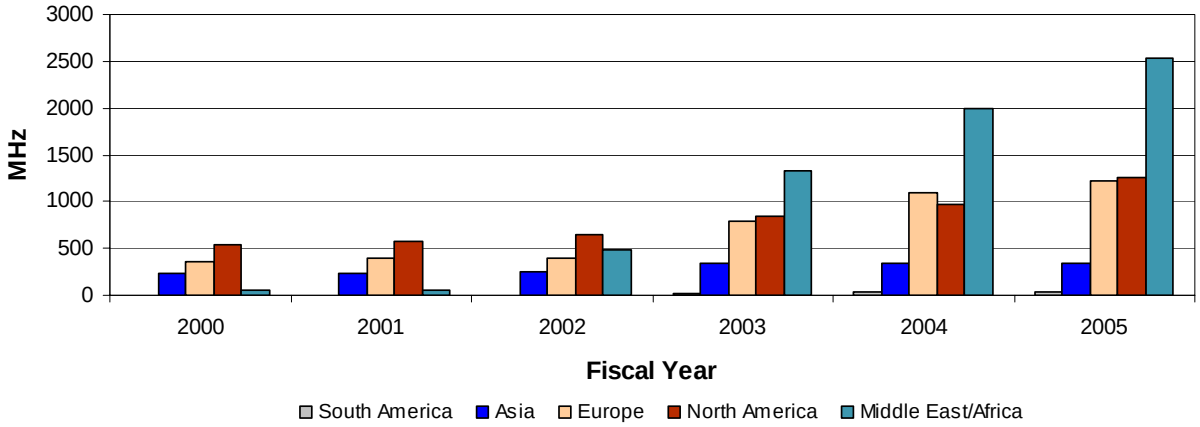


Figure 4-15 Bandwidth Usage by Region

Figure 4-16 and Figure 4-17 show DoD-wide expenditures and bandwidth usage by frequency band for fiscal years 2000 through 2005. Given the growth of bandwidth usage in the Middle East/Africa and North America regions, as well as the type of supported operations, COMMSATCOM frequency band usage has experienced a pronounced shift from comparable usage of both C- and Ku-bands prior to OEF/OIF, to a strong reliance on Ku-band services beginning in fiscal year 2003. The predominance of Ku-band bandwidth is attributed to its higher power spot beams, which enable higher data rates, greater supply, and smaller terminals compared to the global or hemispherical C-band beams. The DoD tendency to shift usage to Ku-band transponders follows a trend across the entire COMMSATCOM industry.

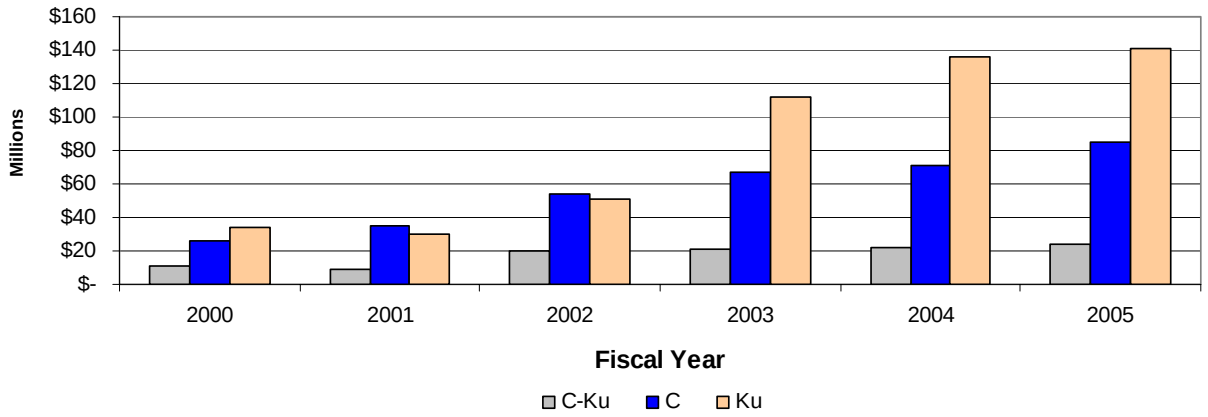


Figure 4-16 Total Expenditures by Frequency Band

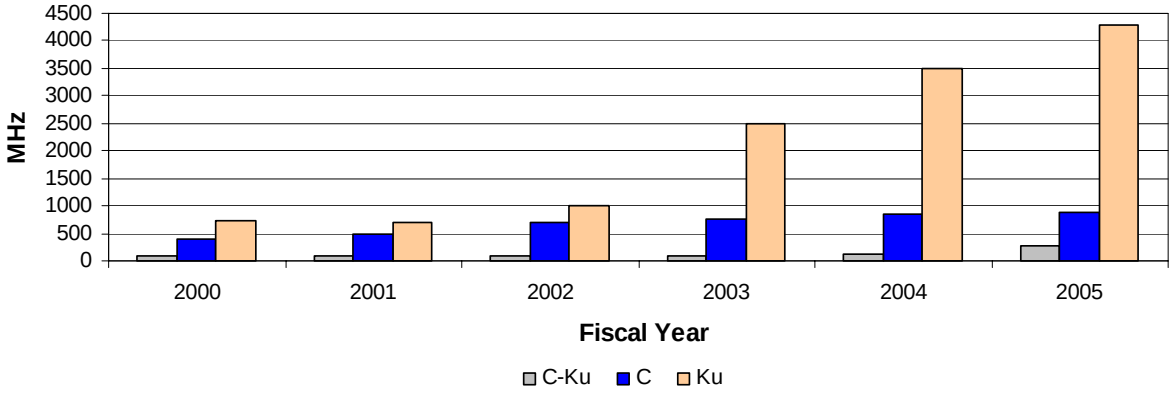


Figure 4-17 Bandwidth Usage by Band

4.3.4.5 Purchasing Patterns – Usage versus Savings

As shown previously, Figure 4-5 illustrates the direct relationship between expenditures and usage and suggests that expenditures were starting to stabilize in fiscal year 2005 while usage continued to increase. DoD COMMSATCOM expenditures and bandwidth usage increased significantly for fiscal years 2000 through 2005. As the DoD becomes increasingly net-centric and its applications become increasingly more sophisticated, the appetite for bandwidth is expected to continue to increase.

DoD has become a very large consumer of commercial satellite service, which has created savings per bandwidth. DoD's COMMSATCOM fiscal year 2005 usage represented approximately four percent of the total industry revenues and demand in terms of both expenditures and bandwidth. DoD's position in the marketplace is most clearly evident with their concentration of bandwidth in the Middle East as Figure 4-18 indicates, driven by OIF/OEF and the emergence of net-centric warfare.

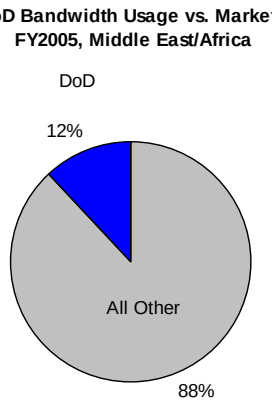


Figure 4-18 Middle East/Africa DoD Bandwidth Usage as a Percentage of Market Demand FY2005

As shown previously in Figure 4-11, two operators supplied 76 percent of the DoD's COMMSATCOM bandwidth for fiscal years 2000 through 2005. Driven by the size and global coverage of their satellite fleet and established relationships with some of the key vendors supporting the DoD, one operator supplied the most DoD bandwidth at 45 percent. The second most prominent operator did not provide any DoD bandwidth prior to fiscal year 2002, at which time Middle East operations began to ramp up. Their fleet of satellites includes a strong concentration over the Middle East, which opportunistically supported OEF/OIF.

In accordance with Section 803 of the NDAA 2005 and in response to ASD(NII) Policy for the Planning, Acquisition, and Management of Commercial Satellite Communications Fixed Satellite Services (FSS) of 14 December 2004, DoD conducted a cost benefit analysis, and as part of its market analysis, concluded that cost savings were driven more by the size of the relationship (i.e., volume and magnitude of business) between the entity buying the bandwidth (vendor or reseller) and operator than by the total bandwidth used by the end user (DoD). Through the Section 818 spend analysis, the value of such relationships was verified as shown in Figure 4-19. In fiscal year 2005, the three largest relationships accounted for more than 50 percent of the DoD's bandwidth usage, and the average Transponder Equivalent (TPE) cost of $944,000 was 25 percent less than the average DoD-wide TPE cost of $1.25 million. Close inspection reveals that the largest relationships resided within the DSTS-G contract. The DSTS-G relationships included in Figure 4-19 represented more than 95 percent of the total DSTS-G bandwidth and more than 75 percent of the top twenty largest relationships. The corresponding average TPE cost for these DSTS-G relationships was $1.1 million, which was 12 percent less than the average DoD-wide TPE cost of $1.25 million.

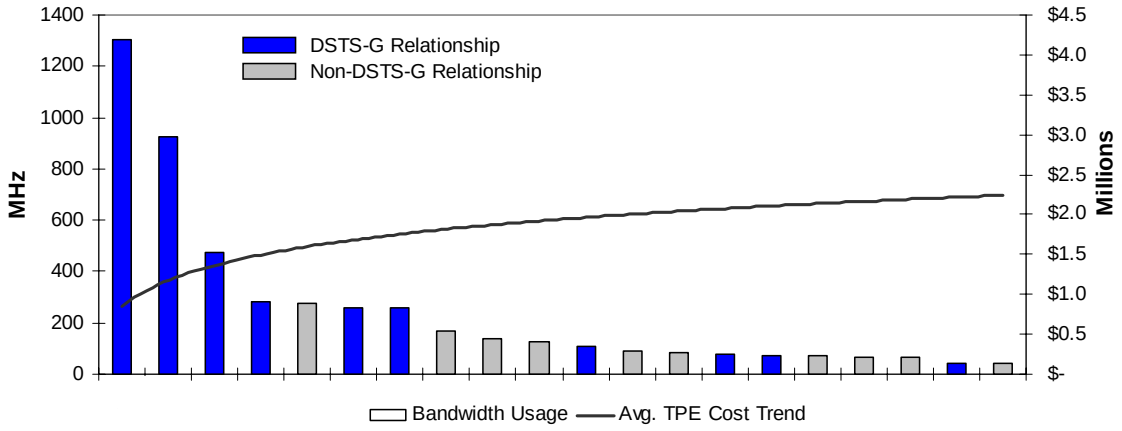


Figure 4-19 Bandwidth Usage and Average TPE Cost Trend by Top 20 Satellite Operator / Vendor Relationships – FY 2005

DSTS-G was the DoD's largest single contract vehicle for fiscal years 2000 through 2005 despite its February 2001 start. As a result, DSTS-G has been instrumental in the price declines DoD has realized. Figure 4-20 shows the portion of the total expenditures attributable to DSTS-G for fiscal years 2000 through 2005. Figure 4-21 shows the total bandwidth usage attributable to DSTS-G during the same period.

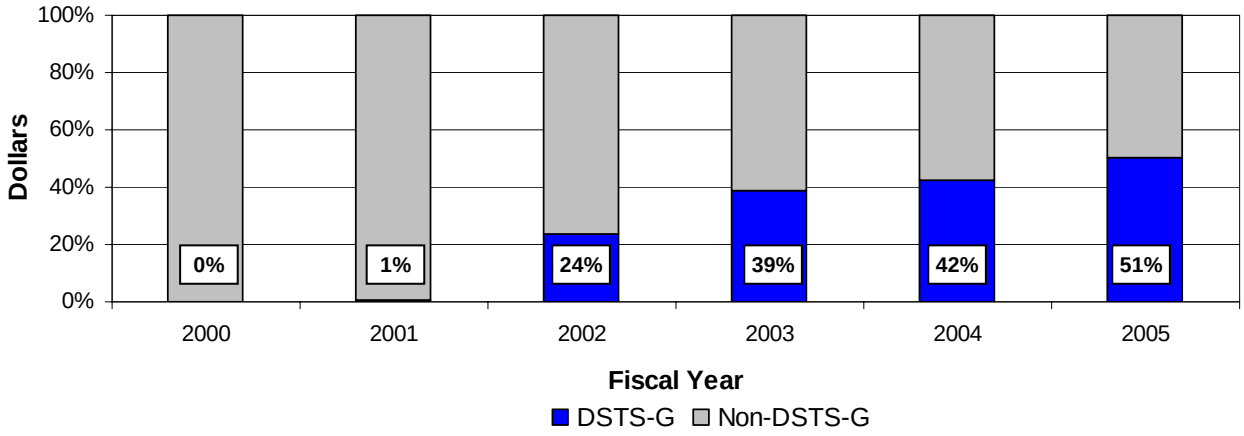


Figure 4-20 Total Expenditures – DSTS-G vs. All Other

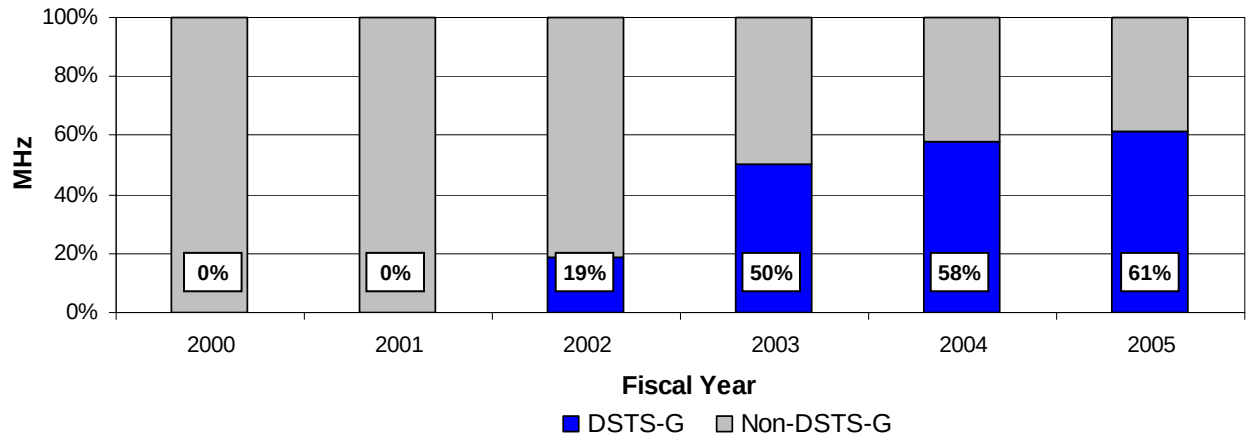


Figure 4-21 Bandwidth Usage – DSTS-G vs. All Other

Comparing Figure 4-20 and Figure 4-21, one would deduce that the cost effectiveness of DSTS-G gradually improved over time because growth in usage exceeded growth in cost. In fiscal year 2002, DSTS-G expenditures amounted to 24 percent of total DoD expenditures, while bandwidth procured through DSTS-G amounted to only 19 percent of the total DoD usage. In fiscal 2005, DSTS-G expenditures amounted to 51 percent of total DoD expenditures, while bandwidth procured through DSTS-G amounted to 61 percent of the total DoD usage.

Figure 4-22 confirms that as the bandwidth usage grew on DSTS-G, the costs lowered. The large concentration of procurements through DSTS-G during OEF/OIF created the large relationships between satellite operators and vendors as shown earlier, and this resulted in bandwidth prices that were almost 25 percent lower than industry averages. This shows that centralizing procurements through a single contract vehicle naturally provides a means for DoD to leverage buying power and reduce costs. From the fiscal years 2004 and 2005 trends, average TPE costs have not decreased at a rate comparable to previous years despite additional bandwidth usage. Therefore, further increases in usage may not derive savings much beyond current levels. This concept is further discussed in Section 4.5.5.1.

The average TPE cost on DSTS-G has dropped 34 percent, from $1.64 million to $1.08 million, between fiscal year 2002 and fiscal year 2005. During this same period, DSTS-G bandwidth usage has increased 161 percent, from 1.62 gigahertz (GHz) to 4.23 GHz. This increase in cost effectiveness is largely attributable to the effective leveraging of purchasing power through DSTS-G as a central contracting mechanism. Figure 4-22 shows the decline in average TPE cost on DSTS-G versus the bandwidth used, as compared to global market averages.[2]

[2] *ibid*

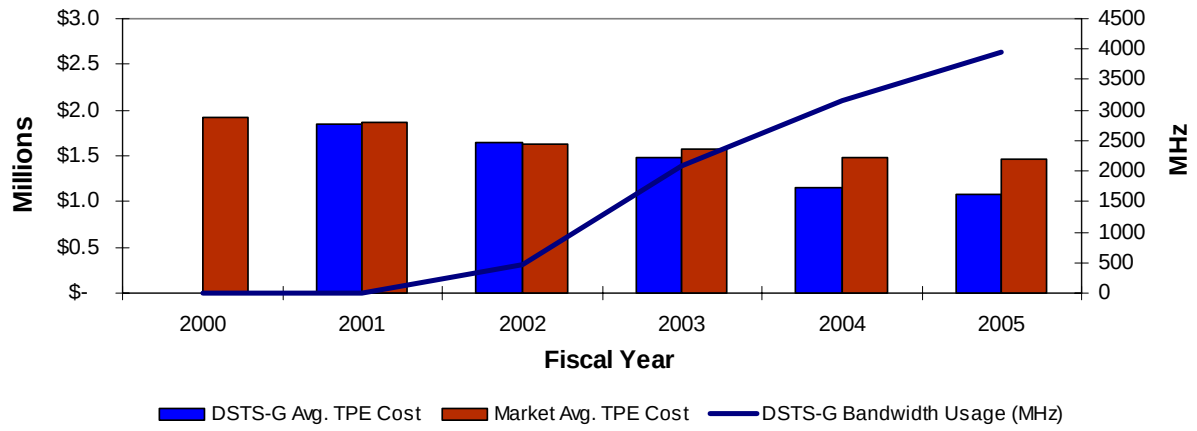


Figure 4-22 DSTS-G Transponder Equivalent Cost & Bandwidth Usage

This is highlighted in Figure 4-23 which shows the average DSTS-G transponder prices versus the global market average transponder prices. DSTS-G prices declined consistent with global market averages between fiscal year 2001 and 2003 when usage was low, but dropped substantially between fiscal year 2003 and 2004 as usage increased. DSTS-G price declines clearly outpaced those realized by the overall market, suggesting factors beyond market average price declines have contributed to DSTS-G price reductions.

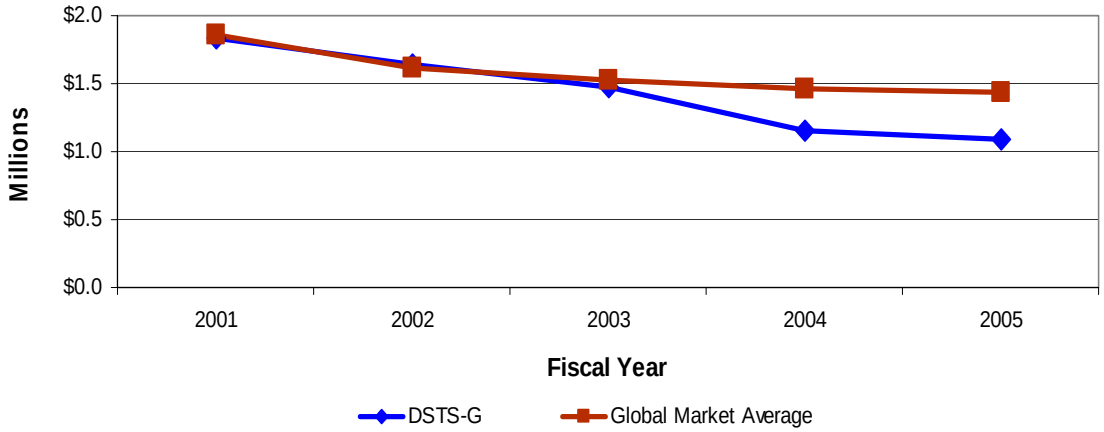


Figure 4-23 DSTS-G Average Transponder Prices vs. Global Market Average Transponder Prices

Conversely, bandwidth pricing essentially remained flat throughout the rest of the DoD's contracting mechanisms as shown in Figure 4-24. As shown earlier, bandwidth outside of DSTS-G relied on many mechanisms to procure small amounts of bandwidth. As a result, increases in bandwidth usage across DoD did not result in average TPE cost savings outside of DSTS-G.

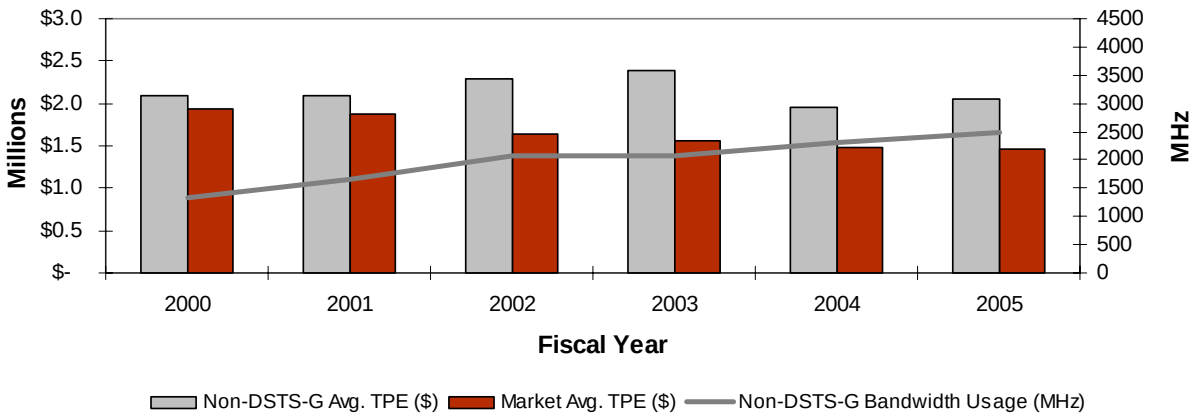


Figure 4-24 Non-DSTS-G Transponder Equivalent Cost & Bandwidth Usage

To further validate the accuracy of discounts available through a large single contract, such as DSTS-G, the task orders driving discounts were further scrutinized. At the onset of OEF/OIF there was a general oversupply of Ku bandwidth in the Middle East/Africa region, and one particular satellite had a very low utilization rate and offered particularly low bandwidth prices to DoD. To ensure that this satellite did not unduly impact DSTS-G prices in the previous analysis, the cost from this satellite was removed from consideration. Even with these most favorable conditions removed, DSTS-G prices still remained lower than other contract vehicles and industry averages. This is depicted in Figure 4-25.[3]

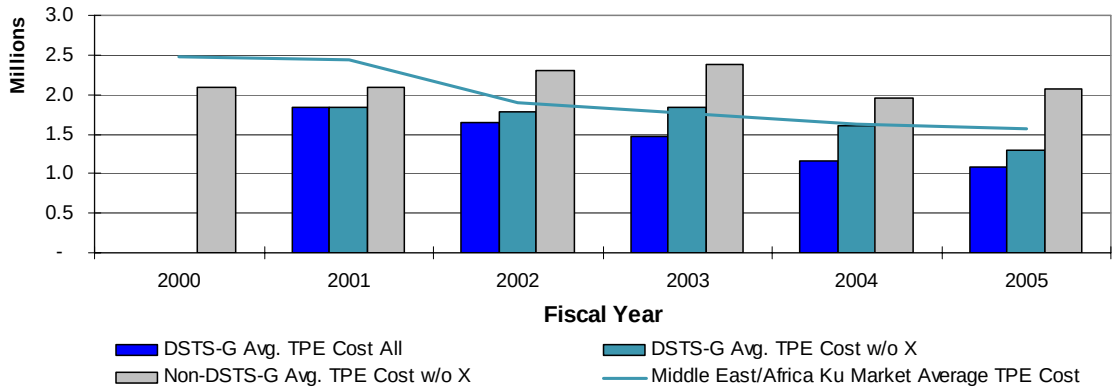


Figure 4-25 Satellite X Average TPE Cost Comparison

Contracting and service fees must also be considered when discussing different contracts. Spend analysis respondents across DoD indicated that most expenditure data provided did not include contracting fees. In the past, DSTS-G fees have totaled as much as eight percent (two percent for contracting fees and six percent for engineering, administration, and management). These rates dropped considerably to less than four percent total at the beginning of fiscal year 2005; however, to ensure that DSTS-G actually was the best overall price performer across its recent history, a worst-

[3] *ibid*

case analysis was performed where an eight percent fee was added on all DSTS-G expenditure data and compared to the average rates outside of DSTS-G (and MTC) contracts. Results, shown in Figure 4-26, indicated that DSTS-G still offered the best overall pricing despite assuming worst-case fees.

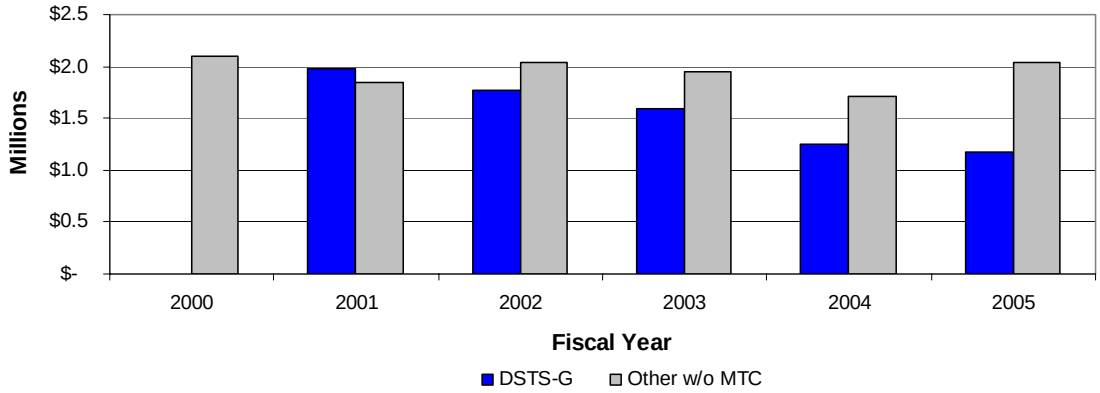


Figure 4-26 TPE Costs: DSTS-G vs. All Other (DSTS-G Inflated by eight percent for Contracting Fees)

Another common misconception regarding the DSTS-G contracts is that vendor overhead makes the contract costly. All previous analyses included vendor overhead in the bandwidth costs. This indicates that DSTS-G remains cost effective, despite any vendor overhead, because of competition, enabling "best of breed" solutions and leveraging ongoing vendor/operator relationships.

4.4 Leveraging DoD Purchasing Power

DoD, as a very large buyer of commercial satellite communications, is clearly leveraging its purchasing power through the DSTS-G contract but incremental improvements may be possible to optimize purchasing power further. At least two potential opportunities exist to improve DoD purchasing power:

- Further concentration of expenditures within DSTS-G
- Consolidation of requirements

These two opportunities are discussed in further detail in subsequent sections.

4.4.1 Further Concentration of Expenditures on DSTS-G

As illustrated previously in Figure 4-22, increased spending on DSTS-G has had a direct effect in reducing the average TPE cost. As illustrated in Figure 4-21, 61 percent of DoD purchased bandwidth in fiscal year 2005 was procured using DSTS-G. The remaining 39 percent of the bandwidth was procured through contract vehicles other than DSTS-G. If 100 percent of the DoD bandwidth needs were procured through DSTS-G, it is likely that additional savings could have been realized.

For example, the 39 percent of the DoD's bandwidth used that was procured outside of DSTS-G equates to 69.5 TPEs (2,502 megahertz (MHz)). Simply applying the fiscal

year 2005 DSTS-G average TPE cost of $1.08 million to the 69.5 TPEs and comparing that to the non-DSTS-G average TPE cost of $2.06 million multiplied by 69.5 TPEs reveals a maximum savings of approximate $68 million, or 21 percent of total fiscal year 2005 expenditures.

The above example is quite simplistic, but it is useful to illustrate the point. DSTS-G and Non-DSTS-G average TPE costs were applied without considering any of the standard price drivers such as band and region. Any additional discounts realized through enhancing the vendor and operator relationships were not considered. However, it does clearly illustrate that opportunities to further leverage DoD's buying power through a concentrated vehicle such as DSTS-G exist, and achieving even a fraction of the $68 million potential would be a sizable savings for the DoD.

As the DoD internally attempts to concentrate spending through DSTS-G, external market conditions further concentrate the DoD's spending through enhanced vendor/operator relationships. In particular, the commercial satellite industry continues to consolidate. Between 2000 and 2005, government-associated organizations (e.g., France's Eutelsat) diminished their government affiliation, and the international consortium of Intelsat became a publicly owned company. Simultaneously, oversupply driven by fiber optic availability and the dot com collapse provoked the satellite industry to respond. In several cases, satellite operators have consolidated in an effort to realize economies of scale. Loral's Skynet North American satellites were acquired by Intelsat in 2004, and more recently SES Global (parent of SES Americom) acquired New Skies Satellites. Intelsat initiated the process to acquire PanAmSat, and many industry analysts predict the trend to continue as the economic drivers for consolidation remain. It is important to note that key drawbacks to consolidating requirements to leverage buying power, as discussed in the next section, are mitigated as industry consolidation creates multiple highly capable global operators.

The spend analysis proved that the DSTS-G is a cost-effective contract vehicle and determined the reasons why. The resulting analysis provides a fact-based means to help reinforce the DoD policy of centralized commercial satellite bandwidth procurement.

4.4.2 Consolidation of Requirements

Aggregating prospective task orders to create larger individual orders may also offer additional savings to the DoD. Because of the diversity of DoD usage, highly related bandwidth requirements commonly become separate, discrete task orders. While there is much variability in bandwidth pricing as shown in Figure 4-27, the regression line in Figure 4-27 shows a downward slope, indicating that larger orders *generally* receive better pricing.

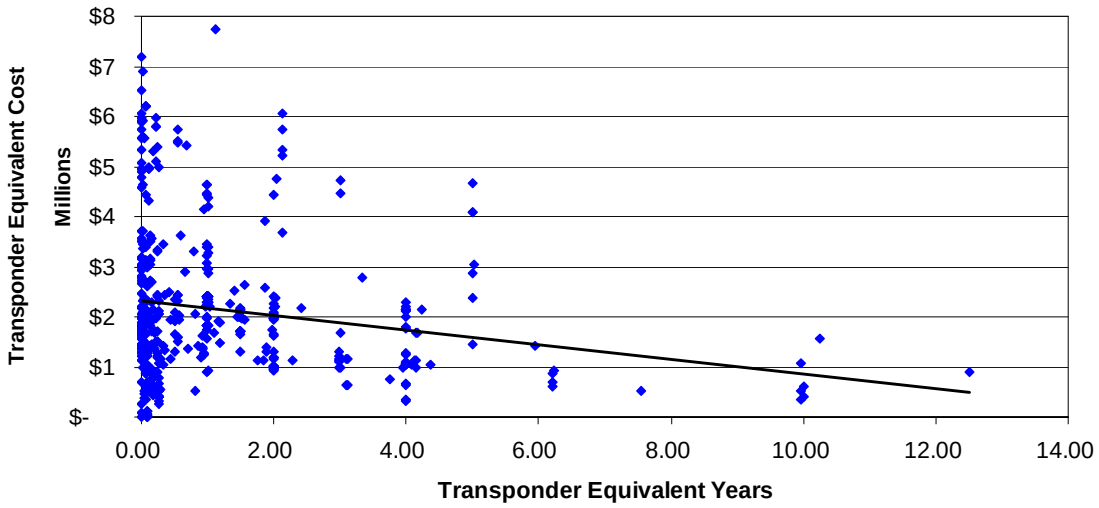


Figure 4-27 Transponder Equivalent Cost vs. Transponder Equivalent Years FY00 through FY05

If the individual data points (representing actual task orders) shown in Figure 4-27 were tightly concentrated around the regression line, it would suggest that requirements should always be aggregated when possible. However, because the individual data points deviate significantly from the regression line, DoD must exercise caution in its approach to aggregating requirements. Stated another way, the savings available by migrating down the regression line are much less than the significant pricing variability driven by other pricing factors. Therefore, DoD will leverage aggregation of individual requirements when certain that other pricing factors cannot increase the cost of an aggregated task order when compared to the sum of costs of individual task orders served by individual opportunistic satellite operators and vendors. Factors that drive pricing are listed in Table 4-2.

Table 4-2 Factors Driving Satellite Communication Prices

Tangible Utilization Factors	• Amount of bandwidth purchased • Duration of bandwidth purchased • Geolocation/orbital slot of satellite • Spectrum band (C, Ku, Ka, X) • Cross-banding (C/Ku) • Type of beam used (global, spot, hemi) • Frequencies within the spectrum band
Intangible Utilization Factors	• Strategic value of customer • Customer potential as anchor tenant (buying for life of satellite) • Likelihood to increase scale and duration • Occupancy rate of the satellite
Internal Business Factors	• Cash flow status • Market share/competition • Original cost to build and deploy the satellite
External Factors	• Market projections • Industry usage trends and economics • Size of satellite operator • Saturation of nearby orbital slots • Type of contract used
Service Variations	• Restoration scheme • Preemption scheme • Orbital integrity (inclination)

The objective of consolidating requirements is to reduce costs by further building the vendor and satellite operator relationship without jeopardizing any cost efficiencies already realized. For example, consider the case discussed in Section 4.3.4.4. DoD was able to realize very low pricing because of unique circumstances that the operator faced at the time. This operator is regionally focused, primarily covering Europe, Middle East, and Africa. If requirements for North American coverage were arbitrarily consolidated with Middle East requirements, the operator may have been precluded from bidding because they could not meet the North American requirement. In this example, awarding two separate task orders would likely result in lower cost than an aggregated task order.

As part of the Phase 1 strategy described in DoD's response to Section 803 of the NDAA 2005, DoD developed an approach to analyze the approximate value of aggregating requirements. Many of the aforementioned pricing factors are not deterministic, meaning that the impact of these factors on bandwidth pricing cannot be accurately predicted. Therefore a sound strategy is to aggregate requirements where inevitable uncertainties are likely to be similar between individual requirements. To accomplish this, DoD determined that consolidating requirements based on three criteria would be effective. Those criteria are:

- Period of Performance
- Region of Coverage

- Band of Coverage

Aggregating by these three criteria supports regional competition between satellite operators and does not preclude a satellite operator that can serve one requirement more competitively than another requirement while the period of performance facilitates the logistical nature of the service requirements.

Analysis previously conducted on DSTS-G task orders revealed that applying this methodology had the potential to save the DoD perhaps a few million dollars over the course of a year. The next opportunity to consolidate a sizable number of requirements will be September 2006. DoD intends to apply this methodology to capture potential savings while managing the risks associated with aggregation.

DoD also is considering consolidating requirements at the user level. Under this approach, DoD would consolidate requirements for a user, most likely at the CC/S/A level, and award a "winner-take-all" construct. This approach potentially aggregates requirements without considering criteria such as region or band, which will become more attractive as the industry continues to consolidate, allowing more satellite operators to support all of a user's requirements. DoD is currently pursuing examples of this type of consolidation.

4.4.3 Manage Potential Risks

Aggregating bandwidth into large purchases is not without risks. DoD already leverages purchasing power to achieve better than market average prices. Aggregating bandwidth without market consideration could upset the competitive effectiveness achieved through the DSTS-G contract vehicle. During the market research and analysis, DoD identified the following potential risks associated with aggregating user needs:

- Impacts to competition of consolidating bandwidth under one "winner-take-all" multiyear task order. Limiting competition could result in higher prices in the future by reducing the potential set of satellite operators that could provide the consolidated bandwidth.
- Potential cost associated with the coordination and management functions related to the aggregation of DoD's bandwidth requirements. Aggregating and managing commercial bandwidth on a large scale may impact current DoD staffing and infrastructure costs associated with preparing, evaluating, and managing the aggregated set of requirements without negatively impacting market segmentation.
- Pursuing short-term savings that may actually result in additional long-term costs. DoD currently exercises the majority of its option years on *multiple* year contracts. Industry recognizes this and often provides the DoD discounts that approximate multiyear discounting. If option years on existing task orders were not exercised and instead were recompeted with other existing or new requirements to prepare a large consolidated task order, industry could potentially view future options with more uncertainty and cease to discount DoD

multiple year contracts. In effect, short-term action may have a negative impact on long-term pricing.

The impact of these risks may, in some cases, outweigh the benefits associated with aggregating DoD user requirements.

4.4.4 Conclusions

As shown in the spend analysis results, DoD is already leveraging its purchasing power but may be able to further leverage its status as a very large user of COMMSATCOM bandwidth.

DoD will continue to concentrate its spending through the DSTS-G contract. The spend analysis has confirmed that DSTS-G is achieving very good pricing; if DoD can increase the DSTS-G's value to vendors and operators by enticing additional DoD customers to use it, all DoD customers could benefit from additional savings realized through increased leverage.

DoD will strategically consolidate requirements at the task order level and at the CC/S/A level as appropriate without jeopardizing existing savings. September 2006 is projected to offer a logical opportunity for the DoD to consolidate requirements, employing a methodology that will not jeopardize any cost efficiencies already realized. DoD will exercise due diligence in its approach to requirements consolidation as potential risks exist.

4.5 Multiyear Analysis

4.5.1 Objective

Section 818 of the NDAA 2006 directs DoD to develop a strategy for acquiring commercial satellite communication services that takes into account various methods of aggregating purchases and leveraging DoD purchasing power, including using multiyear contracting for COMMSATCOM services. Some of the factors that impact bandwidth pricing described in Section 4.4.2 also influence the effectiveness of multiyear contracting. These factors and other influences more specific to multiyear contracting were considered in formulating DoD's COMMSATCOM multiyear contracting strategy.

4.5.2 Multiyear Terms of Reference

Commonly, the term multiyear is used when referring to multiple year contracts; however, specific factors vary between these two contracting types. Table 4-3 summarizes the key differences between multiyear contracting and multiple year contracting vehicles, which are fundamental to the subsequent analysis.

Table 4-3 Multiyear vs. Multiple Year Comparison

Factor	Multiple Year	Multiyear
Period of Performance	• ≤ 1 year base with options	• > 1 year base • Can have option years as well
Funding	• No-year funds (e.g., DWCF) or any appropriated funds (e.g., O&M, RDT&E)	• No-year funds (e.g., DWCF) • Appropriated funds with multiyear funding authority
Contracting Authority	• No specific authority required	• Specific authority required
Termination Liability	• Liability limited to year of termination	• May include termination liability for future years

4.5.3 Approach

This section of the report focuses on the applicability of multiyear contracting to DoD's acquisition of COMMSATCOM services and equipment. The three significant questions DoD addresses are:

- Can DoD use multiyear contracting for COMMSATCOM?
- Should DoD use multiyear contracting for COMMSATCOM?
- How does DoD best use multiyear contracting for COMMSATCOM?

Figure 4-28 shows the relationship between the multiyear contracting analysis and the overall Section 818 response, as well as the steps taken to address the questions above.

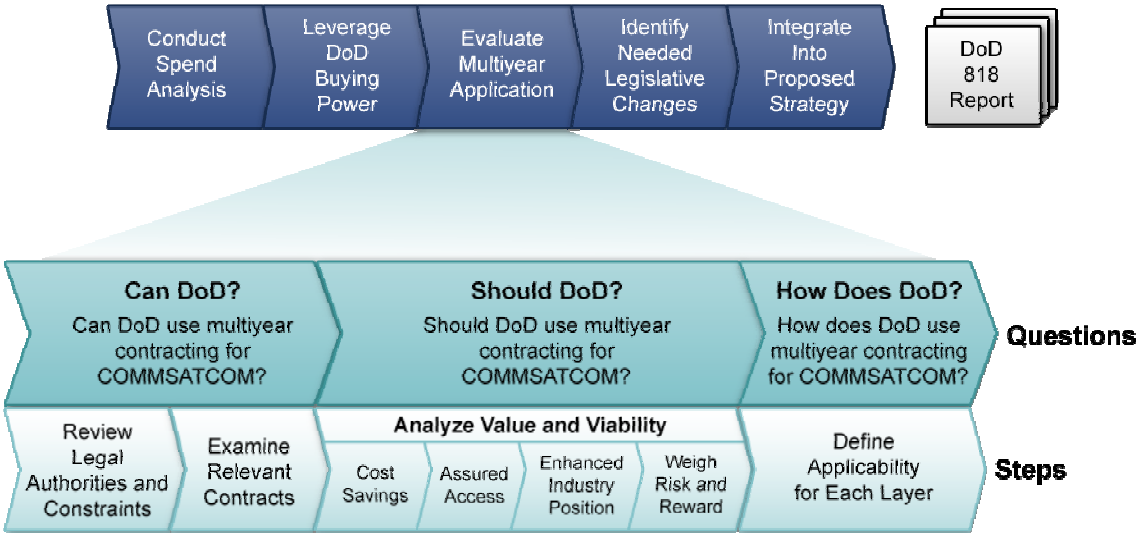


Figure 4-28 Section 818 Multiyear Contracting Analysis Process

The following sections address each of the questions and the associated steps necessary to answer each question.

4.5.4 Can DoD Use Multiyear Contracting for COMMSATCOM?

One of the first steps in DoD's analysis of the use of multiyear contracting for COMMSATCOM requirements was a review of the legal authorities and constraints associated with the use of multiyear contracts.

4.5.4.1 Reviewed Legal Authorities and Constraints

4.5.4.1.1 DoD Multiyear Authority for Telecommunications

The Federal Property and Administrative Services Act of 1949, section 201(a)(3) (40 U.S.C. 501(b)(1)(B)), authorizes the General Services Administration (GSA) to enter into public utility services contracts for periods not to exceed 10 years without a cancellation clause. GSA has delegated this multiyear authority to DoD for procuring telecommunications services and equipment for up to a 10-year base period. DoD exercises this authority using Defense Working Capital Fund (DWCF) funding. DoD can use the GSA-delegated authority directly with appropriated funds, if the funding is authorized for multiyear use by Congress. The GSA delegation contains conditions such as for rates, discounts, and charges that DoD's telecommunications contracts meet. The GSA delegation provides DoD with all the authority necessary to apply multiyear contracting to COMMSATCOM as deemed valuable and appropriate.

4.5.4.1.2 U.S. Code and Federal Acquisition Regulations (FAR)

While the authority discussed in section 4.5.4.1.1 provides adequate authority for DoD to enter into multiyear contracts for COMMSATCOM, a review of U.S. Code and the FAR was conducted as well for completeness and to determine if there was any other multiyear contracting authority that could be use for this purpose.

Per 10 U.S.C. 2306c, a multiyear services contract is a contract for the purchase of services for more than one, but not more than five, program years. Performance under a multiyear contract during the second and subsequent years of the contract may be contingent upon the appropriation of funds. The multiyear contract may require that a cancellation payment be made to the contractor if appropriations are not made.

Authorization for multiyear contracting can be requested in the following circumstances:

1) The use of such a contract will result in substantial savings of the total estimated costs of carrying out the program through annual contracts
2) The requirements remain substantially unchanged during the contemplated contract period
3) There is a reasonable expectation that the head of the agency will request funding for the contract at a level to avoid contract cancellation
4) The estimates of both the cost of the contract and the cost avoidance using a multiyear contract are realistic

In such circumstances, special authority can be requested from Congress. However, no additional benefits to requesting such multiyear contracting authority were identified over use of the GSA-delegated authority DoD already possesses. Therefore, DoD has concluded that the Department does not need legislation to execute multiyear

COMMSATCOM contracts. DoD will continue to consider whether improvements to DoD COMMSATCOM procurement should be proposed.

4.5.4.2 Examined Existing Federal Commercial Satellite Leasing Contracts

During the analysis of federal contracts for COMMSATCOM services, DoD investigated its existing contracts and previously identified Government benchmarks where multiyear contracting was purportedly applied. Examples include Department of State (DoS), Federal Aviation Administration (FAA), Broadcast Board of Governors, and the National Park Service (NPS). This was done to identify cases where multiyear contracting authority yielded effective contract arrangements.

4.5.4.2.1 Existing DoD COMMSATCOM Contracts

Upon full investigation, DoD determined that a number of DSTS-G task orders are multiyear in nature, invoking the GSA authority. The DSTS-G multiyear bandwidth task orders are shown in Figure 4-29. Additional DSTS-G multiyear task orders exist that were used to lease satellite telecommunications equipment (e.g., terminals).

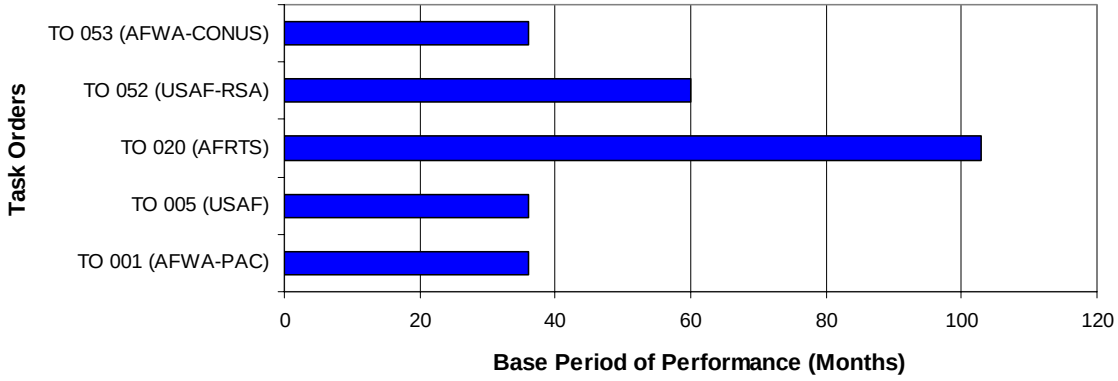


Figure 4-29 DSTS-G Multiyear Bandwidth Task Orders

For these DSTS-G examples, the vendors and satellite operators were informed that the funding for the service was clearly identified within a program element budget and the Government intended to continue the service for the full duration of the multiyear task.

Other COMMSATCOM multiyear contracts existed, were analyzed along with the DSTS-G multiyear task orders, and are further discussed in Section 4.5.5.1.

4.5.4.2.2 Other Government Benchmarks

Of the other purported Government multiyear contract vehicles that were reviewed, many were, in fact, multiple year or IDIQ contracts or not applicable to COMMSATCOM.

4.5.5 Should DoD Use Multiyear Contracting for COMMSATCOM?

The next question DoD addressed is whether multiyear contracting should be used. In other words, does it provide benefits over other contracting methods? A top-level assessment is that multiyear contracting yields the following benefits:

- Offers potential cost savings

- Assures ongoing access to COMMSATCOM bandwidth
- Enhances DoD's position with the commercial satellite industry

The following sections discuss each of these benefits in greater detail as well as the associated risks.

4.5.5.1 Potential Cost Savings

DoD met with senior officials from the four satellite operators that constituted 91 percent of DoD leased COMMSATCOM bandwidth for fiscal years 2000 through 2005 to obtain industry insights on multiyear contracting.

The satellite operators provided DoD with multiyear "rate card" discount information. These rate card discounts exclude the effects of all other potential discounts. The expected savings are shown in Figure 4-30 by calculating the average discount from data provided by three of the four satellite operators (labeled A, B, and C). In summary, multiyear contracting may provide cost savings, with an average discount for three and five year base period contracts equal to eight percent and 11 percent, respectively.

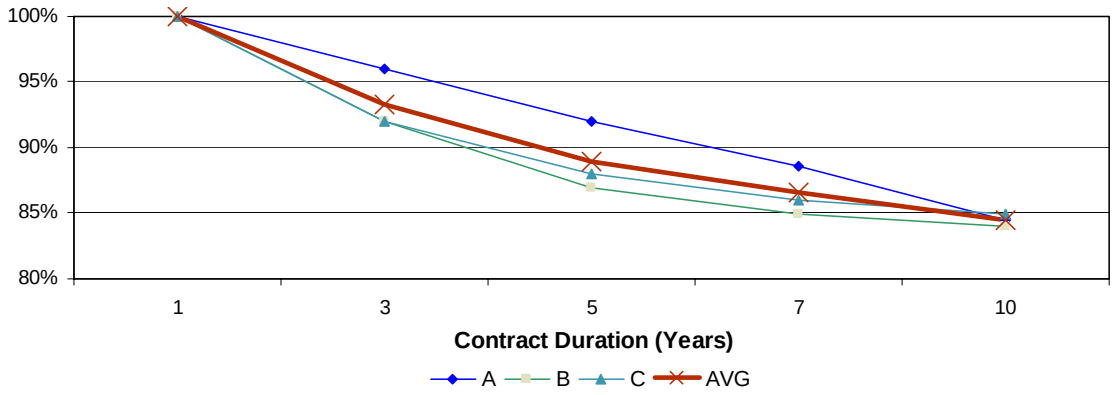


Figure 4-30 Potential COMMSATCOM Multiyear Discounts

It is important to highlight that the discounts quoted by satellite operators were predicated on disregarding other variables and potential discounts. As demonstrated by the spend analysis in Sections 4.3.4.5 and 4.4, DoD is already enjoying discounts for leveraging its buying power through sheer volume and competitiveness of procurements. If added together, the total individual discounts for all sources would exceed the theoretical maximum (MAX) discount commonly set by satellite operators to ensure that costs and profit thresholds are achieved. However, because the 'Total' discount offered to customers does not exceed the 'MAX' discount, individual sources of discounts constrict or 'cannibalize' each other increasingly as the 'Total' discount approaches the 'MAX' discount. An illustrative chart showing the impact of this phenomenon is provided in Figure 4-31.

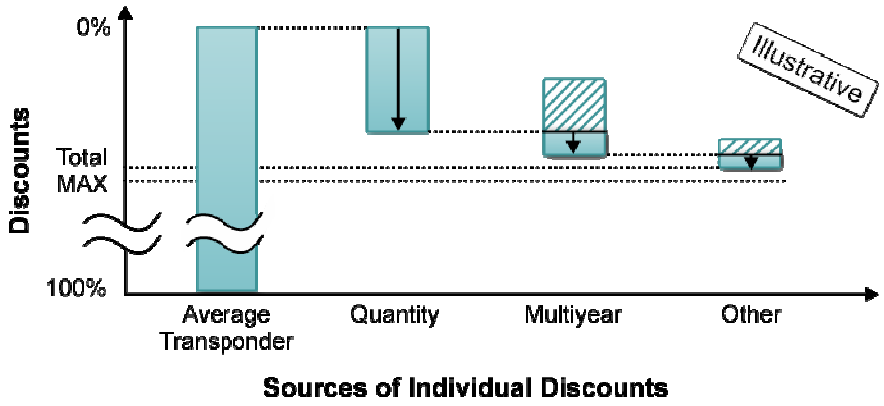


Figure 4-31 Effects of Individual Discounts on Total Discount

In many cases for DoD, particularly for DSTS-G, the extensive discounting received for scale of business likely reduce the expected magnitude of rate card multiyear discounts. This concept of discount cannibalization was discussed in general terms with the satellite operators. During this discussion, industry acknowledged the "compression" of the aggregate discount when multiple individual discounts are in play. In fact, when specifically asked what percentage discount DoD would receive for multiyear contracting on top of discounts DoD already receives, no specific discounts could accurately be quoted by the operators, further suggesting that the concept of discount compression. Coupled with this is the fact that actual prices obtained depend upon many variables. These factors were detailed in Section 4.4.2 and are listed again in Table 4-4.

Table 4-4 Factors Driving Satellite Communication Prices

Tangible Utilization Factors	• Amount of bandwidth purchased • Duration of bandwidth purchased • Geolocation/orbital slot of satellite • Spectrum band (C, Ku, Ka, X) • Cross-banding (C/Ku) • Type of beam used (global, spot, hemi) • Frequencies within the spectrum band
Intangible Utilization Factors	• Strategic value of customer • Customer potential as anchor tenant (buying for life of satellite) • Likelihood to increase scale and duration • Occupancy rate of the satellite
Internal Business Factors	• Cash flow status • Market share/competition • Original cost to build and deploy the satellite
External Factors	• Market projections • Industry usage trends and economics • Size of satellite operator • Saturation of nearby orbital slots • Type of contract used
Service Variations	• Restoration scheme • Preemption scheme • Orbital integrity (inclination)

Furthermore, depending on the specific market conditions, multiyear contracting discounts may not improve rates already being received. For example, by leveraging quantity discounts and market conditions, DSTS-G prices on a specific satellite supporting OEF/OIF approach minimum expected pricing without the use of multiyear contracting. This is shown in Figure 4-32 where applying the average multiyear discounts received from the satellite operators' rate cards to the DSTS-G average, Non-DSTS-G average, and Industry average never reach the rates actually received merely by using multiple year contracting.[4]

[4] *ibid*

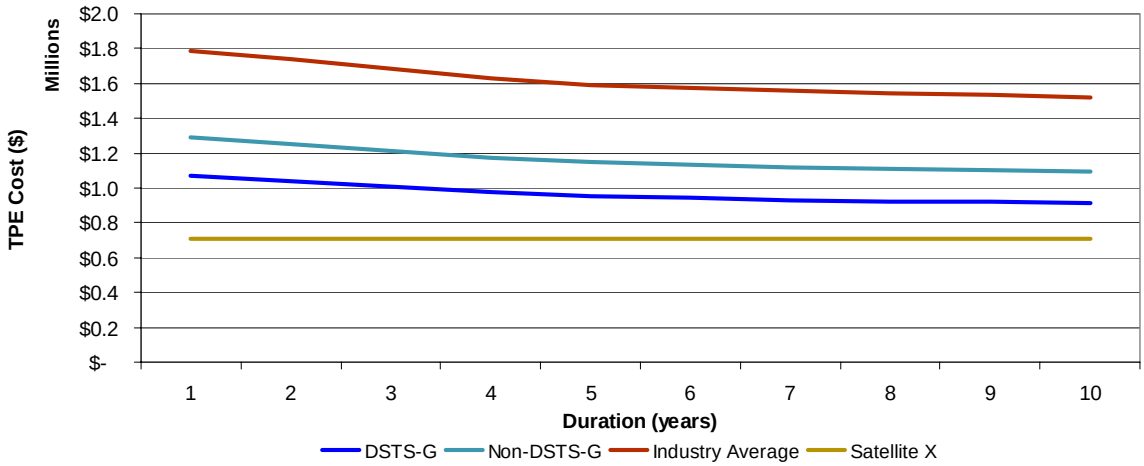


Figure 4-32 Estimated Multiyear Discounts vs. Satellite X

Furthermore, depending on specific market conditions, multiyear contracting may not be available at current rates. One satellite operator suggested that because they expect usage to increase in the near future, they would not extend the current rates provided to DoD on a future multiyear contract.

The research also revealed that DoD empirical multiyear prices vary significantly from the applied average multiyear discount curve of Figure 4-30. Specifically, Figure 4-33 shows the price uncertainty on empirical DoD multiyear contracts collected as part of the spend analysis data-call. The actual costs vary significantly, both above and below, a projected algorithmic pricing curve. These uncertainties are due to the host of pricing variables, including other discounts, as outlined in Table 4-4.

As a result, the savings that DoD may receive by leveraging multiyear contracting cannot be stated deterministically with a high degree of confidence. Namely DoD's discounts for leveraging buying power introduce a fair degree of uncertainty to the multiyear discounts DoD may receive over existing multiple year discounts. Therefore, multiyear contracting should be carefully applied depending on the specifics of the requirement, funding, and situation so the DoD does not incur additional risk with little to no additional benefit.

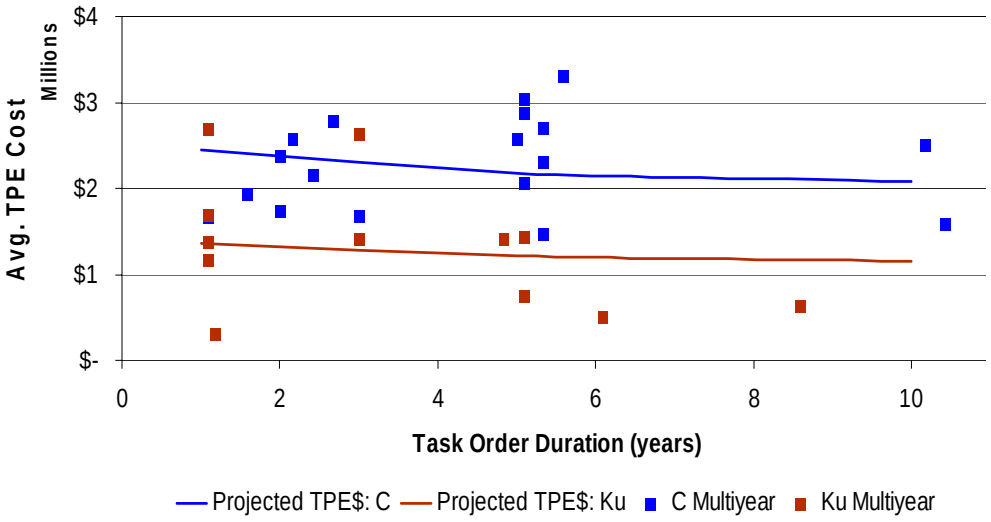


Figure 4-33 DoD Multiyear Contracts Comparison

Ultimately, the potential for cost savings by using multiyear contracting over and above the cost effective average rates DoD already enjoys by leveraging its buying power via the DSTS-G contract vehicle must be carefully balanced against the associated liability risks. If the requirement and funding are certain and stable, then multiyear contracting can potentially reduce cost and should absolutely be systematically considered. If there is a reasonable degree of uncertainty in the requirement or the stability of the associated funding, multiyear contracting may not be worth pursuing for the incremental savings it may provide. The only means to quantify the value of multiyear contracting with sufficient certainty is for the vendors to provide dual pricing (multiple year and multiyear prices) of the requirement in their proposals. DoD will, as a matter of course, pursue such dual pricing for COMMSATCOM service that is not explicitly in support of short-term contingency operations.

4.5.5.1.1 Mitigating Factors

Individual account managers may provide additional discounts to valued customers with strategic procurements. For example, DoD currently receives discounts for multiple year contracts because DoD has a history of exercising more than 90 percent of COMMSATCOM contract options. COMMSATCOM companies also need to cover their costs, so the host of savings opportunities may cannibalize each other as shown in Figure 4-31. If market economics are expected to drive higher prices in any segment, the satellite operators are also likely to offer fewer multiyear discounts. A sample of the comments received during the October 2005 Industry Days are provided in Table 4-5. The comments reflect the complexity DoD faces when making the decision on whether or not to pursue multiyear contracting for COMMSATCOM.

Table 4-5 Industry Perspectives on Multiyear Contracting for COMMSATCOM

Industry	Quoted Responses
Satellite Operators	• DoD is already a valued FSS customer and receives the lowest possible prices regardless of lease duration. DoD already receives significant discounts for one-year leases as DoD is considered to be a valued customer. • Operators recognize the Government as a long-term and stable customer. Prices offered to Government end users, prime contractors and resellers reflect both the importance and the size of this market. Prices also reflect volume and term discounts.
Service Providers	• Providers generally treat option years as long-term leases due to customer stability. • Providers typically gain contract flexibility (e.g., option years) when the contract applies to a US Government end user.
System Engineering / Integrators	• Integrators generally understand that option years are similar to a long-term lease, providing discounted pricing with option years. • Integrators make multiyear commitments so DoD doesn't have to… They take the risk of long-term contracts. • DoD already enjoys valued customer status. Integrators extend significant discounts to DoD even though only a single year commitment is made. • Terms and conditions that come into play include use of multiyear commitments and option-year pricing which allows a measure of customer prediction of future costs.

4.5.5.2 Assured Access to COMMSATCOM Bandwidth

One significant benefit of multiyear contracting is assuring long-term access to the COMMSATCOM bandwidth. Currently, the predominance of task orders reflects a single base year (or less) with option years. Considering the favorable pricing DoD currently receives, the temptation exists to merely rely on option years. However, if option years are not exercised in a timely manner and market conditions change dramatically, DoD could find itself in a situation in which access to the critical commercial bandwidth is not readily available or be forced to pay new, higher market prices.

In all cases, risk and reward must be balanced. For regions in which there is a high likelihood of continued DoD COMMSATCOM bandwidth need and high projected utilization, DoD will explore assuring access to those critical commercial capabilities through a multiyear contract. As part of this analysis, DoD reviewed multiple market reports to ascertain the regional supply and demand relationships. The market analysis, shown in Figure 4-35 and Figure 4-34, identified North America Ku-band as the region of highest utilization over the next five years as shown in Figure 4-34.[5]

[5] *ibid*

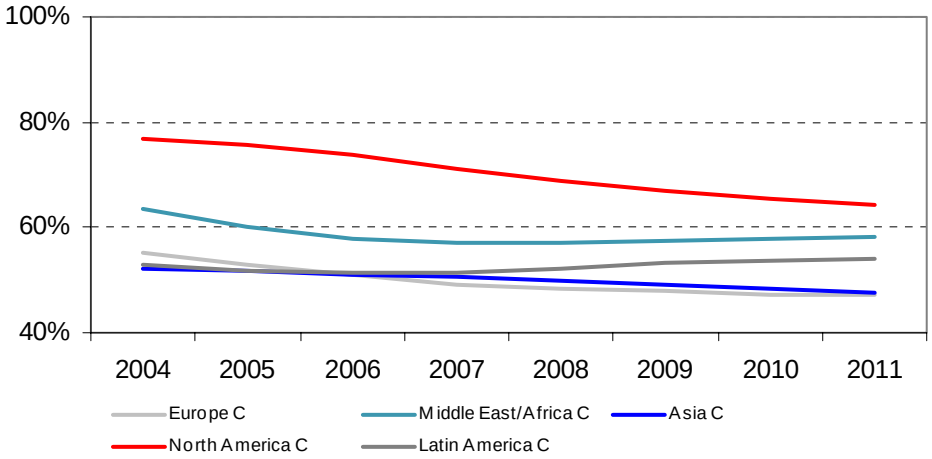


Figure 4-34 Regional C-band Utilization

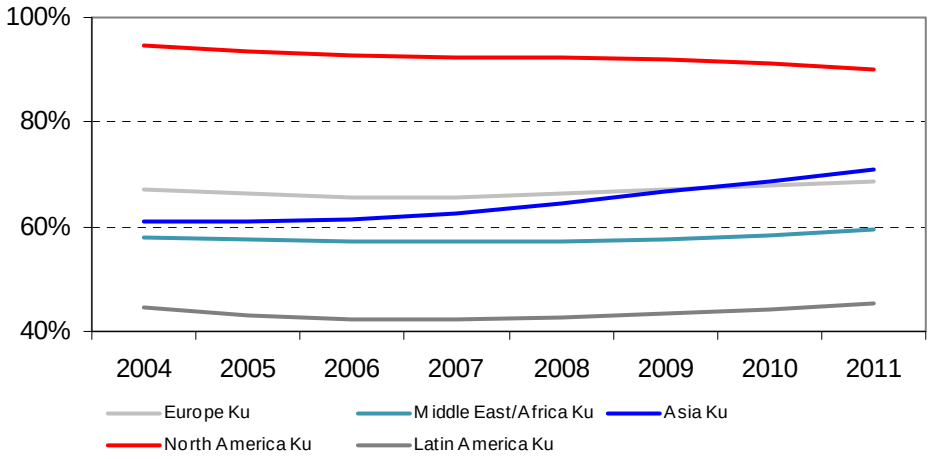


Figure 4-35 Regional Ku-band Utilization

4.5.5.3 Enhancing DoD's Position within the Commercial Satellite Industry

As mentioned previously, extensive discussions were held with executive representatives of the satellite industry in both industry forums and one-on-one discussions. From the COMMSATCOM industry's perspective, companies value contracts according to how their investors value their corporation. Most investors track current quarterly revenue and booking backlog (legally obligated future sales), so inclusion of termination clauses provides industry an opportunity to increase stock prices and decrease interest rates. This is a major consideration for the capital-intensive satellite industry, which sells stock and pursues low interest bonds to fund future satellites.

By entering into multiyear contracts, DoD enhances the financial standing of the COMMSATCOM industry. As a result, DoD could gain position to influence future satellite designs and operating parameters such as command link encryption and spot beam pointing.

4.5.5.4 Weighing Risk and Reward

Figure 4-36 summarizes the factors that influence the choice of multiyear contracting vehicles over alternative contract formats. Stable funding and requirements, coupled with significant cost savings (multiyear reward) and acceptable termination liabilities (multiyear risk) are key determinants in whether the choice of a multiyear contract is the appropriate contract mechanism for COMMSATCOM procurements. Alternatively, if funding is not certain or if there is a high likelihood that the requirements may change, multiyear contracting may not be appropriate. To select the most effective contractual mechanism for DoD, these factors must be carefully considered.

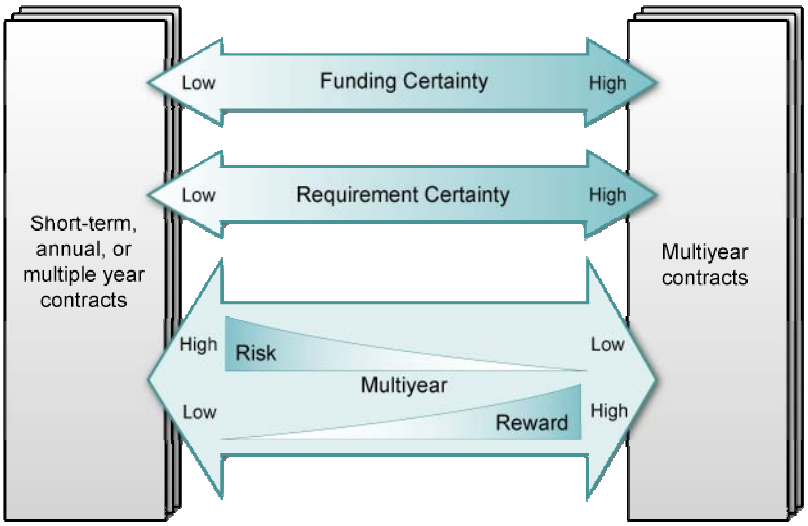


Figure 4-36 Factors Determining Choice of Contracting Vehicle

4.5.6 How Does DoD Use Multiyear Contracting for COMMSATCOM?

Legally, DoD can use multiyear as a contracting tool, and it appears that in cases, multiyear contracting may provide considerable benefits to contracting for DoD in meeting COMMSATCOM requirements. However, the use of multiyear contracting may not apply equally across the three layers of DoD requirements – Long-Term, Pre-positioned, and Contingency. These layers are commonly used as a framework for DoD COMMSATCOM planning. The factors currently associated with each layer are described below:

- Long-Term: Pre-planned by users for stable long-term requirements. Funding is appropriated, usually by POM cycle, and maintained in specific budget. Examples include Navy Commercial Wideband SATCOM Program (CWSP) (formerly know as Challenge Athena) or Armed Forces Radio and Television Service (AFRTS)
- Pre-positioned: Pre-planned in anticipated of short-duration requirements, "Short-term" needs (e.g., training, testing, and humanitarian missions)
- Contingency: Unplanned, unprogrammed contingency requirements. "Short-term" needs funded through supplemental funds, or users discretionary funds (e.g., initial communications deployment for OEF/OIF)

The research supports use of a multiyear contracting strategy for COMMSATCOM when:

1. Requirements are well defined and are not part of the future MILSATCOM deployment
2. Funding is stable (e.g., not based on supplemental funds)
3. Rewards are balanced with risks and uncertainties on a case-by-case basis

The results of the research and analysis are summarized for the three layers of requirements in Table 4-6.

Table 4-6 Applicability of Multiyear Contracting by Requirement Layer

Requirement Layer	Recommendation
Long-Term	• Systematically encourage multiyear contracting where requirements and funding are stable • Identify candidates and consider aggregating bandwidth in a multiyear contract
Pre-positioned	• Evaluate risk/reward through dual pricing if validated requirements exist
Contingency	• By definition, multiyear contracting is not applicable to the Contingency layer

Based on the analysis, DoD developed the process shown in Figure 4-37 to analyze the applicability of multiyear contracting to the purchase of new or recurring COMMSATCOM requirements.

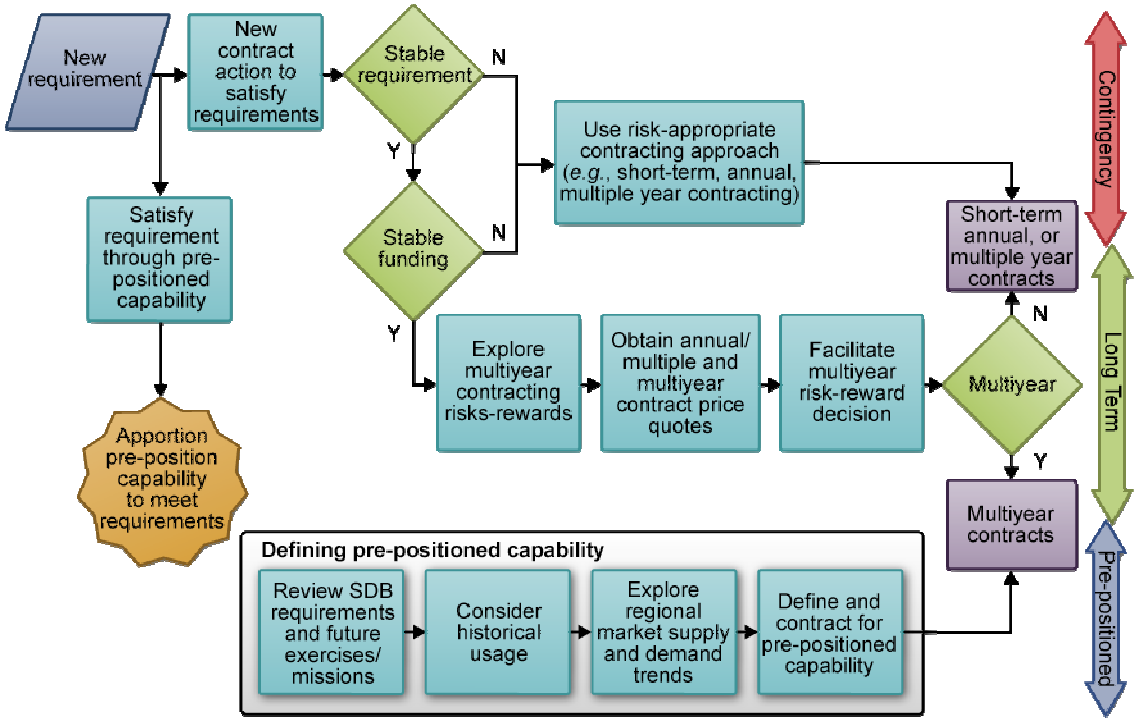


Figure 4-37 Applicability of Multiyear Contracting Analysis Process

4.5.6.1 Applicability of Multiyear Contracting to the Long-Term Layer

Long-term requirements may be excellent candidates for multiyear contracting. A current candidate example is the Armed Forces Radio and Television Service (AFRTS), which has stable requirements and stable funding. In fact, the AFRTS DSTS-G Task Order 20 is a 103 month, multiyear task order using the GSA-delegated authority. For AFRTS, given its degree of stability, the rewards of price breaks outweighed the risks of multiyear funding obligation. Other requirements that are principally funded through supplemental funds do not necessarily meet these conditions.

Based on the analysis, DoD's recommendations for applying multiyear contracting to long-term requirements is to presume using multiyear contracting vehicles, but perform case-by-case risk-reward analysis focusing on requirement and funding stability. Furthermore, DoD will obtain annual/multiple year and multiyear price quotes from vendors to enable accurate analysis and determination of potential cost savings and associated risks.

4.5.6.2 Applicability of Multiyear Contracting to the Pre-Positioned Layer

The DoD has not identified any requirements that validate the need for pre-positioned capacity so multiyear contracting is not applicable at this time.

4.5.6.3 Applicability of Multiyear Contracting to the Contingency Layer

Contingency requirements, by their nature, are not suitable candidates for multiyear contracting individually due to the instability and potentially short duration of the requirement. They are funded, as needed, with supplemental or discretionary funds in response to evolving user needs. Therefore, Layer 3 contingency requirements will

nominally continue to be satisfied through a multiple year (e.g., one year base or less with options) mechanism to mitigate the inherent risk. When pre-positioned requirements are not fully utilizing pre-positioned bandwidth leases, contingency requirements can use pre-positioned bandwidth to ensure high utilization rates.

5 PROPOSED STRATEGY

DoD's proposed strategy for acquiring COMMSATCOM services is based on a foundation composed of the following key features:

- DoD does not currently require a new contract to support the acquisition of COMMSATCOM services since, based on the spend analysis, the DSTS-G contract vehicle clearly leverages DoD purchasing power
- DoD will continue efforts to leverage the Department's purchasing power
    - Continue 803 approach for aggregating requirements and bandwidth when practical (e.g., Sep 06 Task Orders)
- DoD will continue to use multiyear contracting where it is appropriate and cost effective
- DoD does not currently require legislative action to employ multiyear contracting vehicles in support of COMMSATCOM services acquisition requirements
    - Existing GSA-delegated authority provides sufficient flexibility for the DoD and the DSTS-G contract vehicle supports the current range of multiyear needs
- DoD will continue to monitor the satellite industry and engage with its representatives to ensure DoD's future needs are met
- DoD will continue to evaluate its COMMSATCOM expenditures compared against market averages to ensure ongoing leveraging of DoD buying power
- As described in the DoD response to Section 803 of the NDAA 2005, DoD will continue to examine how best to craft a successor contract and enter into Phase 2 of the COMMSATCOM strategy once DSTS-G reaches the end of its useful life or fails to meet DoD needs.

Ongoing and future acquisition of COMMSATCOM services will be evaluated in the context of this strategy.

5.1 Legislative Action Required To Support Proposed Strategy

No additional legislative action is necessary to implement the DoD strategy for acquiring commercial satellite communication services. The authority delegated to DoD, by GSA, which enables the procurement of COMMSATCOM services through contracting vehicles, such as DSTS-G, is considered flexible enough to satisfy the current COMMSATCOM requirements.

6 SUMMARY

A complete picture of DoD's spending on FSS services is contained within this report. For the fiscal years 2000 through 2005, nearly $1.4B was identified, with approximately $330M having been spent in fiscal year 2005. Most of this (87 percent) was spent on bandwidth services as compared to the other categories of satellite services. DoD's spending for COMMSATCOM has grown substantially at a CAGR of 29 percent in the years of the analysis nearly doubling from fiscal year 2001 to fiscal year 2002, with the GWOT. Bandwidth over this same period has grown at a CAGR of 37 percent and has only slightly slowed to 24 percent annually since fiscal year 2003.

The DSTS-G and former MTC contracts constitute a significant portion of the DoD expenditures. More than 79 percent of the contracted bandwidth during this period was procured under these vehicles. And while these four vendors managed a large majority of DoD's bandwidth, just two satellite operators handled 76 percent of the bandwidth. It is the specific relationships between operators and vendors that appear to most significantly drive DoD's bandwidth cost reductions. Larger relationships, i.e. those with more bandwidth procured between a specific vendor and operator, create an overall price trend that approximates market buying power. Within these relationships, the other areas that affect the price of COMMSATCOM services; such as regions, bands, market factors, service types, and business factors, are more easily managed without increasing the DoD's realized prices.

The DSTS-G vendors are leveraging DoD's buying power, creating attractive discounts for DoD. Accordingly, DoD will continue to enforce its existing policy to centralize COMMSATCOM procurement and leverage DoD's buying power. Trying to optimize discounts must be balanced against the identified risks involved. New competitions or aggregation must be accomplished smartly and on a case by case basis to ensure that the positive COMMSATCOM environment that has been created and is burgeoning can be expanded to all organizations within DoD.

DoD's strategy going forward will be based on the analysis in this report as well as a continuation of the DoD response to Section 803 of the NDAA 2005. While there is no new contract required to support COMMSATCOM services, DoD will continue to exercise good Government processes by investigating ways to leverage the DoD's purchasing power. In addition, creating an environment conducive to multiyear contracting, where stable funding and savings are apparent while fulfilling mission capabilities, will continue to be part of the COMMSATCOM acquisition strategy. These factors combined to form a strategic approach for acquiring COMMSATCOM services that aggregates purchases and leverages DoD's purchasing power.

Transitioning to the end-state operating framework will require periodic, recurring processes as detailed in the DoD policy on commercial SATCOM to institutionalize and codify the new DoD strategic approach. The DoD will conduct an annual review of these processes to evaluate their effectiveness and develop recommendations as necessary to keep the policy relevant and responsive to DoD's requirements.

Department of Defense

Commercial Satellite Communications (COMMSATCOM) Service

Spend Analysis and Strategy Report

Appendix A

Spend Analysis Methodology

June 7, 2006

A. APPENDIX A – SPEND ANALYSIS METHODOLOGY

The methodology that was used to develop a refined DoD strategy for acquiring COMMSATCOM services is depicted in Figure A-1 below.

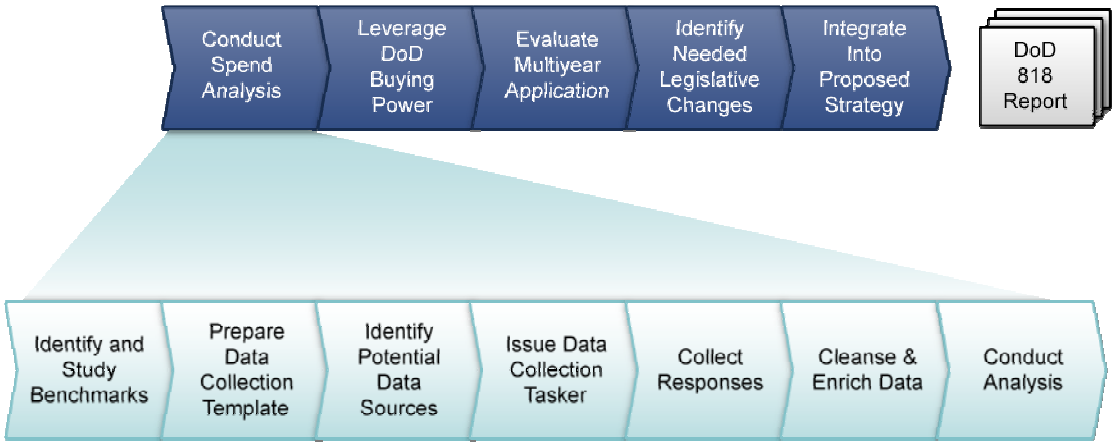


Figure A-1 Section 818 Methodology

Each phase of the spend analysis is described in detail in the following sections.

A.1 Identify and Study Benchmarks

To provide the most insightful and complete spend analysis possible, various benchmarks were studied to scope and frame the data analysis and its outputs. Sources used for benchmarking included various trade journals, analyst reports, GAO reports, spend analysis vendor web sites, and white papers. The most significant sources are referenced in Appendix F.

The insights gleaned from this research were incorporated into every step in the process and are fundamental to the methodology defined, the analysis conducted, and the report generated in response to Section 818 of the NDAA 2006. The baseline questions that were considered throughout the benchmarking exercise included the following:

- What types of spend analysis are common?
- What drives an organization to undertake a spend analysis?
- What do final reports commonly look like?
- What are some spend analysis processes and best practices?
- What are common challenges and pitfalls encountered during a spend analysis?

As verified through benchmarking spend analysis best practices, typical private sector spend analysis methodologies include a common set of activities:

1. Extraction and aggregation: Data is collected from various internal and external sources and consolidated into a single spend database. Data should be standardized into a logical format to facilitate later steps.

2. Enrichment: Data is reviewed to ensure accuracy and completeness. Missing data is obtained by leveraging additional sources, and is then interpolated, or set aside – this data may have limited use across the various spend analysis calculations.
3. Organization: Data is organized into logical, comprehensive commodity, buyer, and supplier categories.
4. Analysis and strategic goals: Using a mix of standard and tailored reporting and analytical tools, data is analyzed on a continual basis to support decisions on strategic sourcing and procurement management in areas, such as cost cutting, streamlining operations, and reducing the number of suppliers to achieve savings. Scope generally covers an organization's entire spend.

For the spend analysis defined in Section 818 of the NDAA 2006, benchmarked methodologies were adapted per the seven different phases shown in Figure A-1.

A.2 Prepare Data-Collection Template

Based on commercial best practices, language in Section 818 of the NDAA 2006, and the DoD's comprehensive understanding of SATCOM, a data-collection template was created in Excel. Data elements were established recognizing technical, microeconomic, and macroeconomic pricing drivers. Administrative data elements were also included to provide full traceability. The final template incorporated 44 elements including several protection and data validation features that were used to facilitate data quality and integrity for the breadth of users entering data. Additionally, instructions and sample data entries were integrated into the overall package that was distributed. A comprehensive list of all data elements requested and their definitions are included in Appendix G.

A.3 Identify Potential Data Sources

Because COMMSATCOM purchases within the Department are not completely centralized, potential data sources were identified through a variety of methods. With the scope of the spend analysis limited to DoD, the DD Form 350 (Individual Contracting Action Report) database provided a starting point for establishing a set of potential data sources. DoD requires a DD Form 350 be submitted for all contracting actions that obligate or deobligate $25,000 or more. DD Form 350 requires users to provide information such as contracting office, contract number, obligated/deobligated dollars, North American Industry Classification System (NAICS) codes, and descriptions of the procured goods or services.

Unfortunately, DD Form 350 is not without problems. Specific deficiencies in the Form DD Form 350 database were noted, such as:

- Lack of linkage and certain other identifiers
- Coding errors
- Missing data
- "Dirty" data

It was determined that the DD Form 350 database would not provide the level of accuracy and fidelity required to fully address the stated objectives; however, it would allow a means by which to establish a set of potential data sources. The DD Form 350 database was queried for contract actions between fiscal year 2000 and fiscal year 2005 with specific satellite-related NAICS codes:

- 513340 – Satellite telecommunications
- 513390 – Other telecommunications
- 517410 – Satellite telecommunication carriers
- 517910 – Satellite telemetry operations on a contract or fee basis

DD Form 350 database queries produced 1592 potentially relevant contracts and actions against those contracts by 304 different contracting organizations within DoD.

In addition to the DD Form 350 data queries, organizations receiving GIG Waivers to purchase COMMSATCOM outside of DISA were identified. DoD policy mandates that DoD customers use DISA's services to acquire computing services, satellite communications, and NIPRNET/Internet connectivity. Given proper justification, GIG Waivers are sparingly granted by the GIG Waiver Panel. A list of GIG Waiver recipients was identified as potential spend analysis data sources and included in the Spend Analysis Tasker.

Both the DD Form 350 data and the GIG Waiver recipient list provided limited contact information (i.e., mailing address, e-mail address, telephone number) for those identified potential data sources. As a result, many different resources were cross-correlated to obtain the requisite contact information. Ultimately, varying levels of contact information for 237 contracting offices was obtained.

A.4 Issue Data-Collection Tasker

The Assistant Secretary of Defense for Networks and Information Integration (ASD/NII) sent the data-collection tasker directly to the Secretaries of Military Departments, Directors of Agencies, and Commanders of Combatant Commands (COCOMs). A copy of this tasker is shown in Appendix G. In addition, the tasker was sent directly to the 237 contracting offices for which sufficient contact information was obtained, as discussed above in Section A.3. Finally, the top contracting organizations, based on the number of identified contracting actions in the DD Form 350 database, were e-mailed the tasker. This three-pronged approach ensured the appropriate parties were reached and the maximum response to the data-collection efforts across the entire department was achieved. Each respondent was directed to complete every one of the 44 data elements for every COMMSATCOM contracting action under their purview.

A.5 Collect Responses

Populated data-collection templates were e-mailed to a DISA point of contact identified in the instructions and subsequently stored centrally using a web-based DISA collaborative tool. All response receipts were closely tracked to facilitate the next phase of the effort. Responses were continually submitted past the identified deadline and

were accepted right up to the stage at which the data set had to be configuration controlled to conduct the analysis.

A.6 Cleanse and Enrich Data

Once the data was received, it went through an extensive cleansing and enriching process. First, the data was validated to ensure relevancy. Any data submitted not within the scope of the spend analysis was not considered in the analysis. The data was then validated to ensure accuracy and completeness. Any data formatted incorrectly was reformatted as necessary (e.g., spelling, capitalization, standard terminology), while maintaining the integrity of the data. Subject Matter Experts (SMEs) identified obvious inaccurate or incomplete entries and corrected them where possible. Any data manipulated by SMEs was flagged to ensure full traceability. Any responses still requiring clarification or additional data were resolved by directly contacting the parties responsible for the data in question.

A.7 Conduct Analysis

All analyses conducted support one of three high-level spend analysis activities prescribed by Section 818 of the NDAA 2006:

- Calculating costs by fiscal year, buying entity, and supplier
- Calculating quantities by fiscal year, buying entity, and supplier
- Identifying purchasing patterns

With 44 data elements being collected for each contracting action between fiscal year 2000 and fiscal year 2005, numerous calculations were possible. To minimize all these potentially unnecessary permutations, calculations that fundamentally answer the stated objectives for calculating costs and quantities were performed initially. After inspecting the results of the initial calculations, secondary calculations were defined as needed to segment and clarify trends, patterns, and anomalies in COMMSATCOM expenditures. Primary cost calculations included costs by fiscal year, buying entity, and supplier, considering eight cost categories:

- Space Segment
- Monitor and Control (M&C)
- Teleport Service
- Leased Terminals
- Host Nation Agreements (HNA)
- Purchased Equipment
- Other
- Total

Primary quantity calculations included quantities by fiscal year, buying entity, and supplier, considering four different quantities:

- Contracts
- Task Orders
- Bandwidth
- 36-MHz Transponder Equivalents

Additional primary calculations included various average cost and quantity calculations segmented by various elements. These calculations helped identify purchasing patterns; specifically trends over time as needed to identify secondary calculations. Additional calculations and results not included in the body of this report are in Appendix E.

Department of Defense

Commercial Satellite Communications (COMMSATCOM) Service

Spend Analysis and Strategy Report

Appendix B

Acronyms and Terminology

June 7, 2006

B. APPENDIX B – ACRONYMS AND TERMINOLOGY

B.1 Acronyms

AFRTS	Armed Forces Radio and Television Service
AFSCN	Air Force Satellite Control Network
AFWA	Air Force Weather Agency
ASD(NII)	Assistant Secretary of Defense (Networks & Information Integration)
BOA	Basic Ordering Agreement
BW	Bandwidth
CAGR	Compound Annual Growth Rate
CC/S/A	Combatant Command/Service/Agency
CENTCOM	United States Central Command
COCOM	Combatant Command
COMMSATCOM	Commercial Satellite Communications
CONOPS	Contingency Operations
CONUS	Continental United States
CST	DISA Commercial Satellite Team
CWSP	Commercial Wideband SATCOM Program
DFARS	Defense Federal Acquisition Regulation Supplement
DISA	Defense Information Systems Agency
DISN	Defense Information Systems Network
DITCO	Defense Information Technology Contracting Office
DoD	Department of Defense
DoS	Department of State
DSTS-G	DISN Satellite Transmission Services – Global; Primary DISA contract for the procurement of COMMSATCOM
DTS-P	DISN Transmission Service – Pacific
DWCF	Defense Working Capital Fund
EUCOM	United States European Command
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulation
FFP	Firm Fixed Price
FSS	Fixed Satellite Service
FY	Fiscal Year
GAO	Government Accountability Office
GHz	Gigahertz
GIG	Global Information Grid
GSA	General Services Administration
GWOT	Global War on Terror
HNA	Host Nation Agreement
Hz	Hertz
IDIQ	Indefinite Delivery Indefinite Quantity
J6	Joint Staff, Command and Control
M&C	Monitor and Control

Mbps	Megabits Per Second
MHz	Megahertz
MILSATCOM	Military Satellite Communications
MSS	Mobile Satellite Service
MTC	Managed Transponder Contract
NAICS	North American Industry Classification System
NC FCB	Net-Centric Function Capabilities Board
NDAA	National Defense Authorization Act
NPS	National Park Service
OCONUS	Outside the Continental United States
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OPLAN	Operation Plan
POM	Program Objective Memorandum
PoP	Period of Performance
RDT&E	Research, Development, Test & Evaluation
SATCOM	Satellite Communications
SDB	Satellite Database
SIA	Satellite Industry Association
SME	Subject Matter Expert
SOCOM	United States Special Operations Command
SPACECOM	United States Space Command
TPE	Transponder Equivalent – 36 MHz transponder for one year
U.S.	United States of America
U.S.C.	United States Code
USAF	United States Air Force
USAF-RSA	USAF Range Standardization and Automation Program

B.2 Terminology

Bandwidth	A measure of frequency range, measured in Hertz (Hz)
C-Band	Portion of the Electromagnetic spectrum in the microwave range of frequencies ranging from 4 to 6 GHz
Cost	Obligated dollars regardless of period of performance duration, counted in fiscal year of period of performance start
DD Form 350	Form used to record procurements made by the Department of Defense in excess of $25,000
Department	The Department of Defense
Frequency Band	Portion of the electromagnetic spectrum in which a signal in transmitted, i.e., C, Ku
Geostationary Orbit	A satellite in an orbit synchronous with the Earth's rotation and directly above the Earth's equator that appears to remain fixed over one point on the Earth
GIG Waiver	Waiver granted to DoD organizations to allow the purchase of computing services, satellite communications, and

	NIPRNET/Internet connectivity outside of DISA
Global Beam	A satellite antenna that covers the entire earth visible from orbit
(Hemi)spherical Beam	A satellite antenna with coverage that concentrates power so that it will cover a specific region, country, or hemisphere
Inclined Orbit	A satellite whose orbit exhibits an angle other than zero degrees with the equatorial plane. In context, a geostationary satellite whose orbit has degraded and therefore no longer remains fixed over one point on the Earth
Intermediary	Vendor/Reseller/Integrator
Ku-Band	Portion of the Electromagnetic spectrum in the microwave range of frequencies ranging from 12 GHz to 18 GHz.
Multiple Year	(FAR Subpart 17.103) contracts require options to be established and exercised for each program year after the first
Multiyear	(FAR Subpart 17.103) contracts are contracts for the purchase of supplies or services for more than 1, but not more than 5, program years
Purchasing/Buying Entity	Customer/Bill Payer, i.e., CC/S/A
Region	Uniquely defined satellite service geographic regions; Asia, Europe, Middle East/Africa, North America, South America
Space Segment	The bandwidth service portion of an end-to-end satellite communications link
Section 803	Section 803 of the 2005 National Defense Authorization Act
Section 818	Section 818 of the 2006 National Defense Authorization Act
Spend	Equally distributed dollars spent over period of performance
Spot Beam	A satellite antenna with limited geographic coverage and a signal that is concentrated in power
Supplier	Satellite bandwidth provider
TPE Cost	Bandwidth cost normalized to one year and 36 MHz, e.g., 36 MHz leased for 1 year at $1M equates to a TPE cost of $1M; 18 MHz leased for 1 year at $1M equates to a TPE cost $2M
Usage (bandwidth)	Equally distributed bandwidth used over period of performance, normalized for period of performance duration
Volume (bandwidth)	Obligated bandwidth regardless of period of performance, counted in fiscal year of period of performance start

Department of Defense

Commercial Satellite Communications (COMMSATCOM) Service

Spend Analysis and Strategy Report

Appendix C

Data Applicability

June 7, 2006

C. APPENDIX C – DATA APPLICABILITY

C.1 Total Expenditures Captured

Total expenditure is defined as all expenditure information captured, regardless of period of performance. In-scope spend is defined as the prorated spend for the fiscal year 2000 through fiscal year 2005 time frame. Because the Section 818 data-call requested COMMSATCOM spend information for any procurement whose period of performance resided in or crossed the fiscal year 2000 to fiscal year 2005 time frame, not all collected spend data was considered in-scope for this analysis. Below are the total and in-scope spend captured as a result of the data-call utilized for this analysis (in-scope).

Total Spend Captured: $ 1,710,158,183
Total In-Scope Spend Captured: $ 1,378,473,440

C.2 Data Integrity

Data-entry personnel were asked to indicate, on a line-item basis, the nature of the cost information provided in response to the data-call. If cost information was considered known, they were to input "Definitive", if cost information was approximate, they were to input "Estimate". Such information on a line-item basis offers insight into overall data integrity. The table below summarizes the definitive nature of the received data.

	Line Items	Percent Total	Total In Scope Expenditures	Percent Total
Total	1055	100	$1,378,473,440	100
Definitive	496	47	$388,135,468	28
Estimate	408	39	$635,539,540	46
Unknown	151	14	$354,798,432	26

C.3 Data Completeness

Forty-four data elements were requested for each line item in the data-call. A line item represents a single purchase element – either a satellite link or hardware purchase. The table below outlines the completeness of data received from data-entry personnel in response to the data-call. Metrics are indicated as a percentage of total spend, i.e., the percentage listed is the percent of total in-scope spend captured for which the respective data element was available on a line item basis. Items with low completeness values reduced the sample set for segmented computations where spend and/or quantity of purchases were analyzed at a segmented level, i.e., spend by band, bandwidth by region, etc. Because of limited data completeness for some data elements, segmented analyses only used a sample set of data that included the requisite data element. As a result, such analyses only represented the respective subset of all data captured, and thus a subset of DoD COMMSATCOM procurements.

Data Element Sample	*Set Total In-Scope Spend*	*Percent In Scope Total*
Customer / Bill Payer	$1,378,473,440	100%
Effort	$1,143,656,968	83%
Term Usage	$1,179,200,916	86%
Period of Performance Start	$1,378,473,440	100%
Period of Performance End	$1,378,473,440	100%
Contract Type	$838,579,878	61%
Vendor / Integrator / Reseller	$1,183,800,197	86%
Satellite Bandwidth Provider	$935,207,614	68%
Satellite Number	$934,380,019	68%
Satellite Transponder Number	$808,599,908	59%
Orbit Type	$933,926,435	68%
Orbital Position (degrees)	$925,132,340	67%
Bandwidth Capacity (MHz)	$966,580,187	70%
Frequency Band	$950,008,142	69%
Beam Coverage	$854,557,165	62%
Transmit Location (Tx)	$929,896,967	67%
Receive Location (Rx)	$929,128,531	67%
Preemptable (Yes / No)	$802,719,190	58%
Restorable (Yes / N/A)	$809,561,962	59%

The limits described in the above table lead to variations between different analyses. For example, consider bandwidth expenditures by frequency band. While total bandwidth expenditures (disregarding frequency band) sum up to one number, the sum of bandwidth expenditures by frequency band may sum up to a different number due to limited data availability in the frequency band field. Despite such limits, the breadth of the sample set used in the spend analysis offered sufficient completeness for decisive analysis.

C.4 Spend Data Fidelity

Additionally, some spend data was not available at the segmented level, e.g., bandwidth, teleport service cost, HNA cost, and data was only provided at the total cost level. As a result, it was only possible to include these line items in the bottom line – total spend. Consequently, these items could not be included in any average transponder equivalent (TPE) costs, or other market comparisons. The data below summarizes the prevalence of spend data provided only at the total cost level.

Line Items	*Percent Total*	*Total In Scope Spend*	*Percent Total*
69	7%	$180,364,589	13%

Department of Defense

Commercial Satellite Communications (COMMSATCOM) Service

Spend Analysis and Strategy Report

Appendix D

Data and Analysis Assumptions

June 7, 2006

D. APPENDIX D – DATA AND ANALYSIS ASSUMPTIONS

D.1 Data Cleansing and Enriching Assumptions

During the cleanse and enrich stage of the data-collection and -consolidation process, it was necessary to normalize, standardize, and ensure completeness of data submitted by data-entry personnel to compile a functional data set for analysis. As the format and content of data entries varied among submissions, uniform assumptions were made to normalize all data. The list below outlines the various assumptions made throughout this process:

- Widebeam was equivalent to hemi/hemispherical beam.
- Steerable spotbeam was equivalent to spotbeam.
- If space segment information was provided as throughput (Mbps) instead of bandwidth (MHz), 1 Mbps was assumed to equal 1 MHz.
- If link bandwidth information was provided as components of an asymmetrical link, total bandwidth was assumed to be the sum of the uplink and downlink.
- If satellite data was provided and only total cost was provided (no cost segments), cost was attributed to space segment, if the contract was bandwidth-centric. If the contract was a turn-key, end-to-end solution, no assumption was made about space segment costs.
- If the data was received from multiple sources for one procurement were conflicted, clarification was sought from respondents. If the conflicting sources included DITCO, data provided by DITCO was used.
- If only transmit location was provided, receive location was assumed to be the same.
- In some cases, data was provided with 0's in the M&C and/or HNA columns that indicated there were costs but inadequate resolution. These were assumed to be negligible and disregarded. The uncertainty in these situations was captured by flagging each entry as “estimate”.
- If the customer was identified as DISA *and* another organization, the other organization was assumed to be the ultimate customer/user for purposes of analysis.
- If no task order number was provided, the procurement was assumed to be the only task order on the contract (i.e., stand alone contract).
- If no base or option year number was provided, the procurement was assumed to be the base (or only) year of the contract.
- If no item identifier (used to identify multiple links and/or hardware purchases on one procurement) was provided, and no other line items were provided with the same contract, task order, and option year number, the item was assumed to be the only item on the procurement. If the item shared contract, task order, and option year information with other items, item identifiers were assigned accordingly, i.e., A, B, C.
- If no period of performance end date was provided, the period of performance was assumed to be one year.

- If the total cost provided was more than the sum of the sub costs, the difference was attributed to “other cost”.
- For purchased equipment, if date of purchase was missing, any provided commissioning date was used as the date of purchase, at the recommendation of data-entry personnel.
- If SATCOM data was not provided, equipment and other purchases were assumed to support commercially provided SATCOM task orders, as reflected in data-call instructions which requested only services and hardware in support of COMMSATCOM.
- For questionable data, if a respondent was not available to verify assumptions about data, the data was excluded, rather than including incorrect data.
- Responses that described MSS including satellite telephony, maritime SATCOM, and in-flight bandwidth were excluded.
- Responses that described a satellite service as transportable, but not considered mobile (earth station does not move freely), were included.
- Terrestrial (non-SATCOM) communications were excluded.
- Rental of satellite dishes for broadcast in which the bandwidth lease was transparent to government were excluded.

D.2 Data Analysis Assumptions and Methodologies

Transponder Equivalent (TPE) Calculation
TPE calculates the fractional equivalent of a full 36MHz transponder, regardless of lease duration.

$$TPE = \frac{BW}{36}$$

where $BW =$ space segment bandwidth in MHz

Transponder Equivalent Years (TPE Years) Calculation
TPE Years calculates the fractional equivalent of a full 36MHz transponder normalized to a duration of one year.

$$TPE\_Years = \frac{BW}{36} \times \frac{Duration}{365}$$

where $Duration =$ [Period of Performance End (PoPe)] – [Period of Performance Start (PoPs))], calculated in days

Transponder Equivalent Cost (TPE Cost) Calculation
TPE Cost calculates the cost of a bandwidth procurement normalized to a full 36MHz transponder for a duration of one year. To calculate TPE cost, a procurement must have bandwidth, duration, and space segment cost values. Any procurement not

provided with all three data elements was not included in such related calculations (i.e., average TPE cost), but were included in bottom line calculations (i.e., spend or bandwidth usage, etc.).

$$TPE\_Cost = \frac{Space\_Cost}{TPE\_Years}$$

where $Space\_Cost$ is the indicated space segment (bandwidth) portion of the total purchase cost.

Average Transponder Equivalent Cost (Avg. TPE Cost) Calculation
Avg. TPE Cost calculates an enterprise-level average TPE cost by summing all space segment costs and dividing by the sum of all TPE years.

$$Avg.\_TPE\_Cost = \frac{\sum Space\_Cost}{\sum TPE\_years}$$

Regional Calculations
Because satellite links are either intraregional (within one region) or inter-regional (between regions) any calculations addressing regional segmentation require special attention. For the purposes of this analysis, the following methodologies were consistently adhered to for all regional computations.

Spend or bandwidth usage by region: If a link was intraregional, all expenditures and bandwidth was attributed to the region indicated. If a link was interregional, expenditures and bandwidth were split evenly between the two regions indicated.

Average TPE cost or bandwidth by region: If a link was intraregional, it was considered in the region indicated. If a link was interregional, the link was considered in both regions indicated.

Base Year vs. Option Year Calculations
Based on the data cleansing and enriching assumptions outlined above, any calculations that differentiated between base and option years of a contract were addressed as follows: If the base or option year number was identified as zero, the procurement was considered a base year; if the base or option year number was identified as non-zero, the procurement was considered an option year.

Allocation of Spend Across Time
To provide an accurate report of COMMSATCOM spend across time, a procurement's period of performance must be taken into account. All reporting of spend in this analysis was computed as follows: Spend from procurements with periods of performance residing in a single fiscal year was attributed to that fiscal year. Spend from procurements extending across multiple fiscal years was prorated and attributed to each fiscal year based on the duration of overlap (in months). For example, if a $12 million procurement began on August 1st, 2001, and ended on July 31st, 2002 (2 months in fiscal year 2001, 10 months in fiscal year 2002), then $2 million would be attributed to

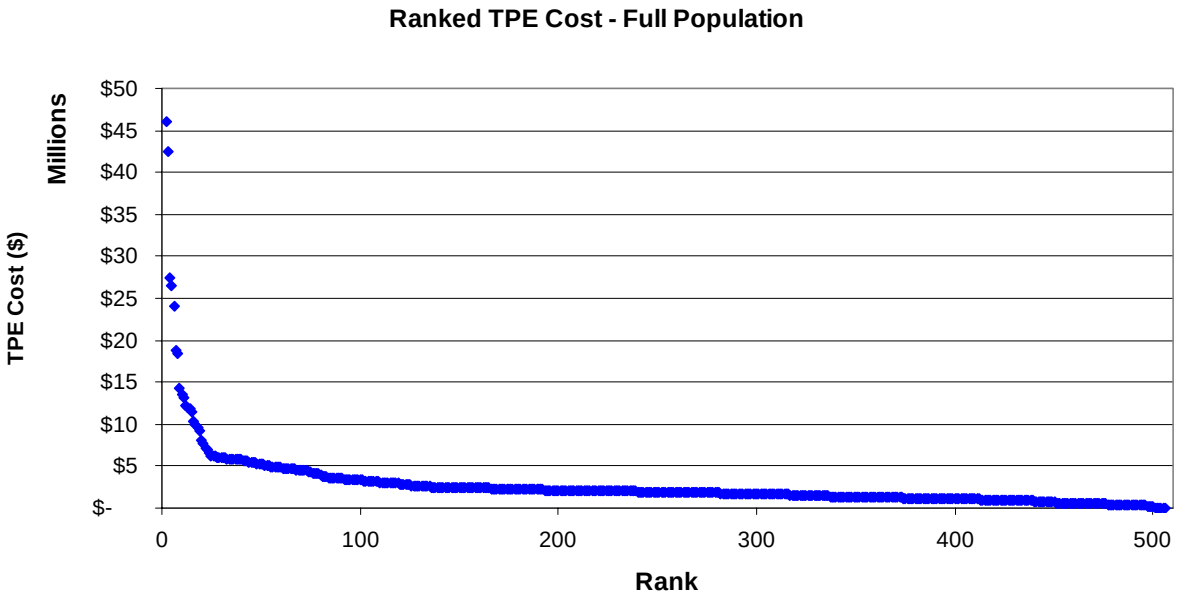
fiscal year 2001, and $10 million would be attributed to fiscal year 2002. Partial months were rounded to the nearest whole month. Because of the time-specific nature of the procurement of host nation agreement services and purchased equipment, specific spend indicated as HNAs and purchased equipment were attributed to the fiscal year of the procurement's period of performance start. All other spend was assumed to take place evenly across the respective period of performance.

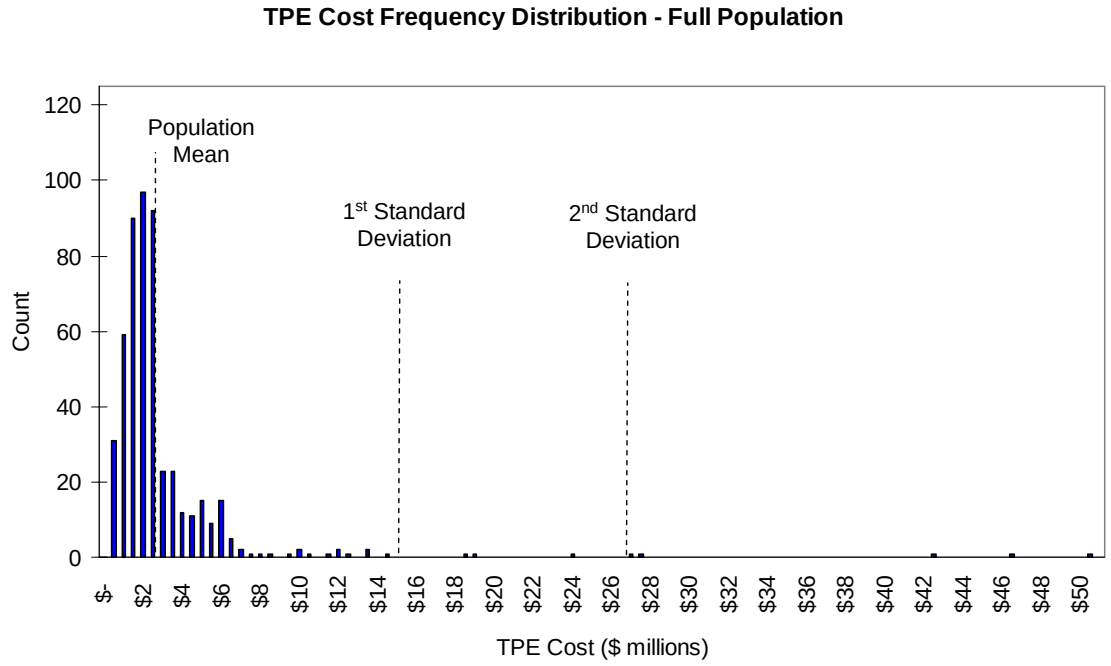
Allocation of Bandwidth Usage Across Time

To provide an accurate report of COMMSATCOM bandwidth usage across time, a procurement's period of performance must be taken into account. All reporting of bandwidth usage in this analysis was computed as follows: Bandwidth was converted to TPE Years using the methodology discussed above. Bandwidth from procurements with periods of performance residing in a single fiscal year was attributed to that fiscal year in the form of TPE Years. Bandwidth usage from procurements extending across multiple fiscal years was prorated and attributed to each fiscal year based on the duration of overlap (in months). For example, if a 36MHz transponder was procured within a period of performance beginning on August 1st, 2001, and ending on July 31st, 2002 (2 months in fiscal year 2001, 10 months in fiscal year 2002), then 1/6 TPE Year would be attributed to fiscal year 2001, and 5/6 of a TPE year would be attributed to fiscal year 2002. Partial months were rounded to the nearest whole month. Bandwidth usage was assumed to take place evenly across the period of performance, i.e., no breaks in service, no variation in bandwidth used. After TPE Years were allotted to fiscal years, the sum of TPE Years during that time period was then multiplied by 36 to reflect a size and duration normalized use of bandwidth (in MHz) for the period of interest.

Consideration of Statistical Outliers

When computing average TPE costs throughout this analysis, it was critical to exclude statistical outliers from various computations to produce a realistic view of the DoD COMMSATCOM pricing environment. The outliers discussed below were excluded from average TPE cost calculations, however were still included in bottom line expenditure and bandwidth usage reporting. Because of extreme variation in both bandwidth volume procured and period of performance duration, as well as specific circumstances applicable to individual procurements (i.e., immediate surge requirements, need to preempt other users, regional considerations), TPE costs on an individual link basis exhibited an extreme statistical distribution. Below is the raw rank and distribution of TPE costs on a per link basis.





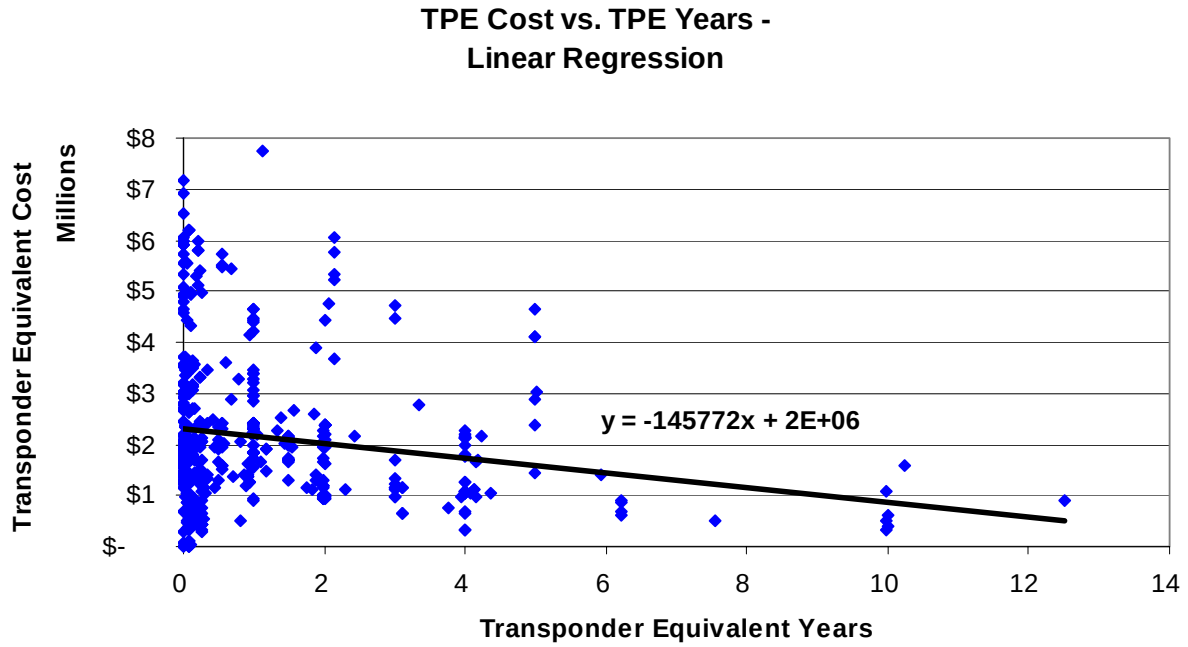
As can be seen in the charts above there was great variability of individual TPE cost within the full population set with a mean of $3.3 million and a standard deviation of $12.5 million – 379 percent of the mean. To perform sound analysis, statistical outliers were removed to produce a functional sample set. This was performed in two stages. First, data points with questionably high individual TPE costs, indicating probable data entry error or misinterpretation of data-call instructions, were removed from the data set by eliminating any procurement with an individual TPE cost outside of two standard deviations from the mean. This removed 3 data points out of 506, leaving 99.41 percent of the sample set in tact. The resultant data set represented a more realistic initial

population set free of purported entry error with a sample mean of $2.6 million and a sample standard deviation of $2.9 million. However, with a standard deviation of the same order of magnitude as the mean, and in leveraging market pricing research, it was clear that statistical outliers still existed within the data set. Therefore, in order to produce a functional sample set, additional data points were then removed if they were beyond two sample standard deviations of the new recalculated sample mean. This second tier of elimination removed an additional 16 data points from the data set, leaving 96.25 percent of the data set in tact for all analyses. The resulting sample set had a sample mean of $2.2 million, and a sample standard deviation of $1.5 million, providing for a functional data analysis sample set.

It should be noted that the above stated means and standard deviations are averages of individual TPE costs – not enterprise-level average TPE costs as employed throughout the analysis and outlined above. Because enterprise-level TPE costs appropriately weight individual procurements in calculating an average cost per TPE, as opposed to effectively performing an average of averages, they provide a more accurate representation of aggregate pricing trends as was the focus of this analysis. This methodology also reflects industry standards including those leveraged for market comparison throughout this report. The analytics involved in such enterprise level analysis do not provide for individual data points with which to identify and remove statistical outliers. Therefore, the above outlined methodology was employed to produce a functional data set, and then the enterprise level methodology was utilized in performing the spend analysis and related analytics. For this reason, average TPE costs cited in the report will differ from those stated in this appendix which only addresses the consideration of statistical outliers. The methodologies employed in calculating both enterprise level average costs per TPE and individual TPE costs are outlined in this section above.

Transponder Equivalent Pricing Model

At various points throughout this report's analysis a pricing model was used to determine theoretical pricing based upon the TPE Years of a procurement under various scenarios. Because TPE Years is both a measure of bandwidth volume and duration of procurement, it was a reliable compound metric that represented the overall "size" of a bandwidth service procurement considering both volume and duration. Market reports and industry feedback indicate that both bandwidth volume and duration are key considerations when pricing space segment purchases. As such, regressing TPE cost against TPE Years produces a relevant basic model for theoretical pricing within the context of this analysis.



Compounded Annual Growth Rate (CAGR)

At points throughout the analysis, a compounded annual growth rate (CAGR) was cited. This metric was used to calculate a growth rate across a period of time, assuming a constant rate of growth, year to year, over the full duration. The CAGR was calculated as:

$$CAGR = \left(\frac{P_1}{P_0} \right)^{\left(\frac{1}{N}\right)} - 1$$

where $P_1 =$ Ending Value; $P_0 =$ Beginning Value; $N =$ the duration in years.

Department of Defense

Commercial Satellite Communications (COMMSATCOM) Service

Spend Analysis and Strategy Report

Appendix E

Additional Spend Analysis Results and Supporting Data

June 7, 2006

E. APPENDIX E – ADDITIONAL SPEND ANALYSIS RESULTS AND SUPPORTING DATA

As discussed in Section 4.3.4, the challenge with COMMSATCOM data analysis is the strong influence of technical elements (e.g., spectrum band, satellite, region, orbit type) on costs. To conduct a thorough spend analysis capable of providing the desired results, 44 data elements were collected from the end users, resulting in the possibility of billions of calculations. Section 4.3.4 provides the spend analysis results most relevant to the recommendations and strategies described in the report; however, many different analyses were performed in addition to those results presented above.

This section presents a full set of graphics depicting the analysis required for Section 818. The following charts capture costs, quantities, and trends, analyzed by different elements such as fiscal year, band, region, and contract vehicle. The structure of this section is shown in Table E-1.

Table E-1 Spend Analysis Chart Structure

Analysis Type	Specific Analysis	Figure
Cost	DoD-Wide Spend by Fiscal Year	Figure E-1
	DoD-Wide Spend by Customer	Figure E-2
	DoD-Wide Spend by Vendor	Figure E-3
	DoD-Wide Spend by Operator	Figure E-4
	DSTS-G Spend by Region, C-band	Figure E-5
	DSTS-G Spend by Region, Ku-band	Figure E-6
	DSTS-G Spend by Region, C-Ku Crossband	Figure E-7
	Non DSTS-G Spend by Region, C-band	Figure E-8
	Non DSTS-G Spend by Region, Ku-band	Figure E-9
	Non DSTS-G Spend by Region, C-Ku Crossband	Figure E-10
	DoD-Wide Spend by Region, C-band	Figure E-11
	DoD-Wide Spend by Region, Ku-band	Figure E-12
	DoD-Wide Spend by Region, C-Ku Crossband	Figure E-13
	DoD-Wide Obligated Spend by Customer	Figure E-14
	DoD-Wide Spend by Satellite	Figure E-15
Quantity	DoD-Wide Bandwidth by Fiscal Year	Figure E-16
	DoD-Wide Bandwidth by Customer	Figure E-17
	DoD-Wide Bandwidth by Vendor	Figure E-18
	DoD-Wide Bandwidth by Operator	Figure E-19
	DSTS-G Bandwidth Usage by Region, C-band	Figure E-20
	DSTS-G Bandwidth Usage by Region, Ku-band	Figure E-21
	DSTS-G Bandwidth Usage by Region, C-Ku Crossband	Figure E-22
	Non DSTS-G Bandwidth Usage by Region, C-band	Figure E-23
	Non DSTS-G Bandwidth Usage by Region, Ku-band	Figure E-24
	Non DSTS-G Bandwidth Usage by Region, C-Ku Crossband	Figure E-25
	DoD-Wide Bandwidth Usage by Region, C-band	Figure E-26
	DoD-Wide Bandwidth Usage by Region, Ku-band	Figure E-27
	DoD-Wide Bandwidth Usage by Region, C-Ku Crossband	Figure E-28
	DoD-Wide Obligated Bandwidth by Customer	Figure E-29
Trend	DSTS-G versus Market Average TPE Cost by band	Figure E-30
	DoD-Wide Average TPE Cost by Program	Figure E-31
	DoD-Wide Contracts/Task Orders Executed by Band	Figure E-32
	DoD-Wide Contracts/Task Orders Executed by Region	Figure E-33
	DSTS-G Avg TPE Cost by Region, C-band	Figure E-34
	DSTS-G Avg TPE Cost by Region, Ku-band	Figure E-35
	DSTS-G Avg TPE Cost by Region, C-Ku Crossband	Figure E-36
	Non DSTS-G Avg TPE Cost by Region, C-band	Figure E-37
	Non DSTS-G Avg TPE Cost by Region, Ku-band	Figure E-38
	Non DSTS-G Avg TPE Cost by Region, C-Ku Crossband	Figure E-39
	DoD-Wide Avg TPE Cost by Region, C-band	Figure E-40
	DoD-Wide Avg TPE Cost by Region, Ku-band	Figure E-41
	DoD-Wide Avg TPE Cost by Region, C-Ku Crossband	Figure E-42

The charts referenced in Table E-1 are shown below.

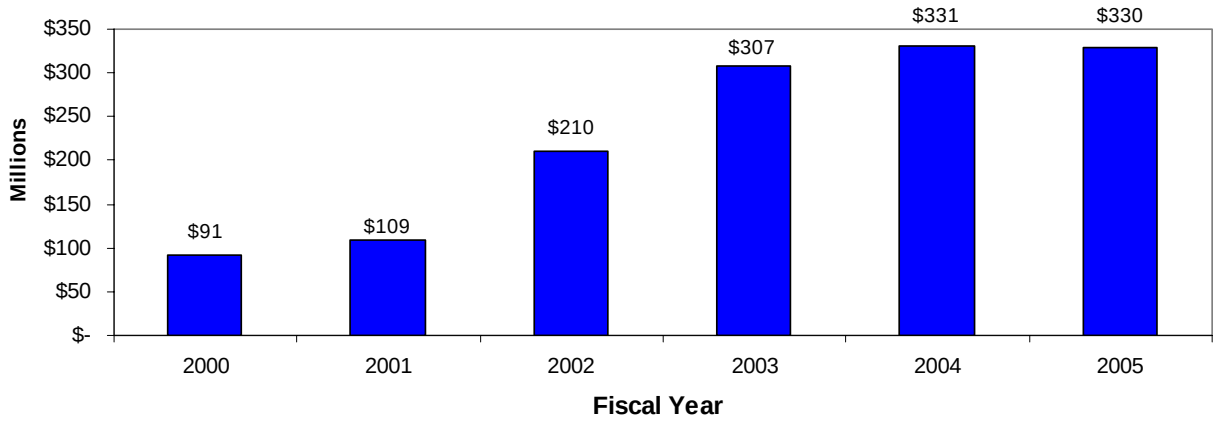


Figure E-1 DoD-Wide Spend by Fiscal Year

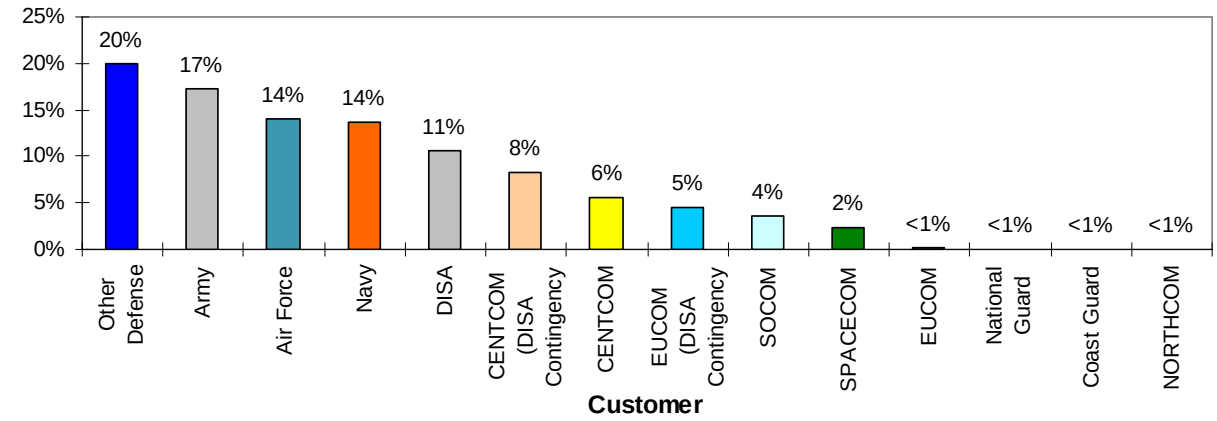


Figure E-2 DoD-Wide Spend by Customer

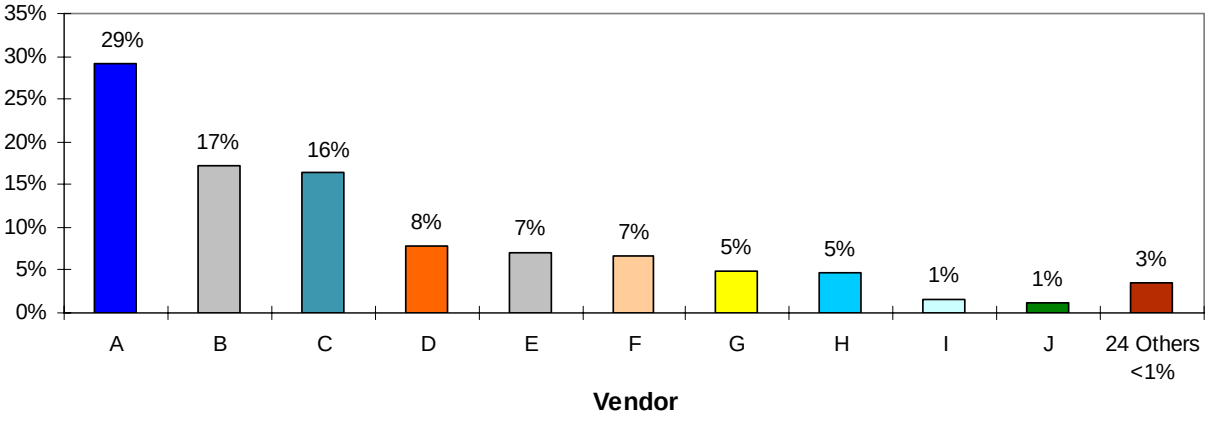


Figure E-3 DoD-Wide Spend by Vendor

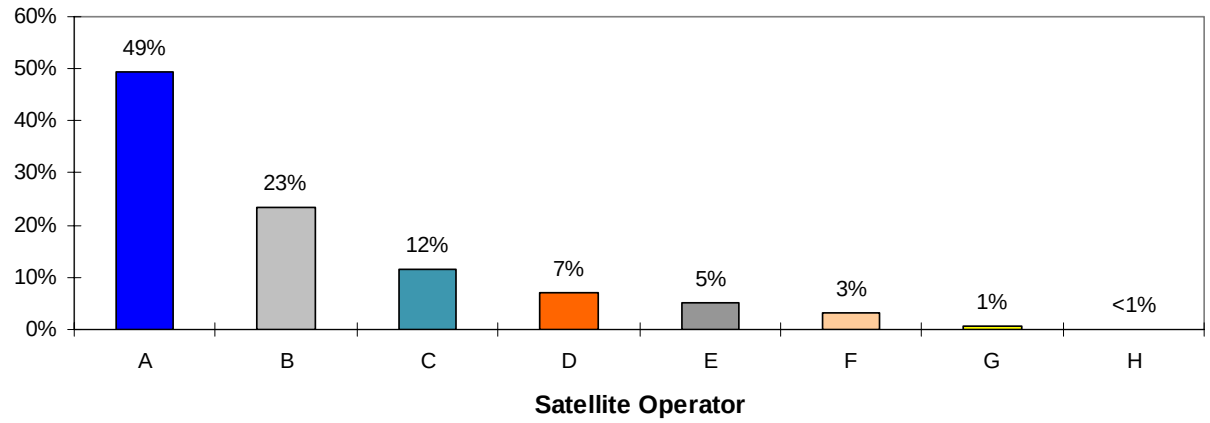


Figure E-4 DoD-Wide Spend by Operator

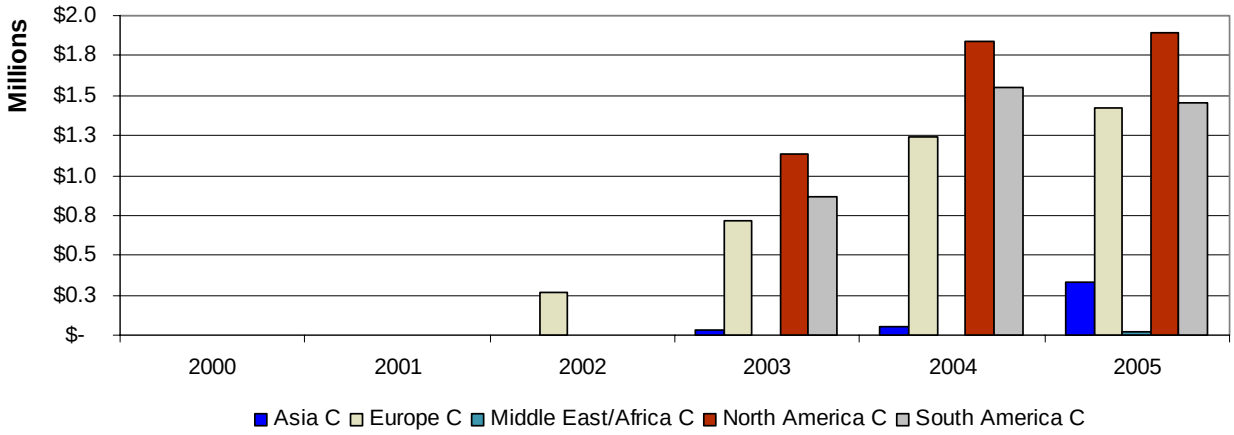


Figure E-5 DSTS-G Spend by Region, C-band

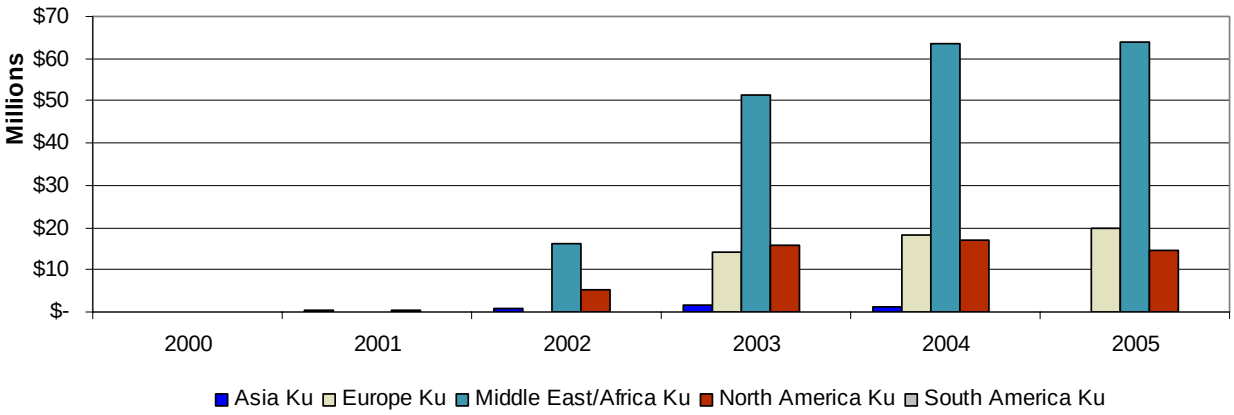


Figure E-6 DSTS-G Spend by Region, Ku-band

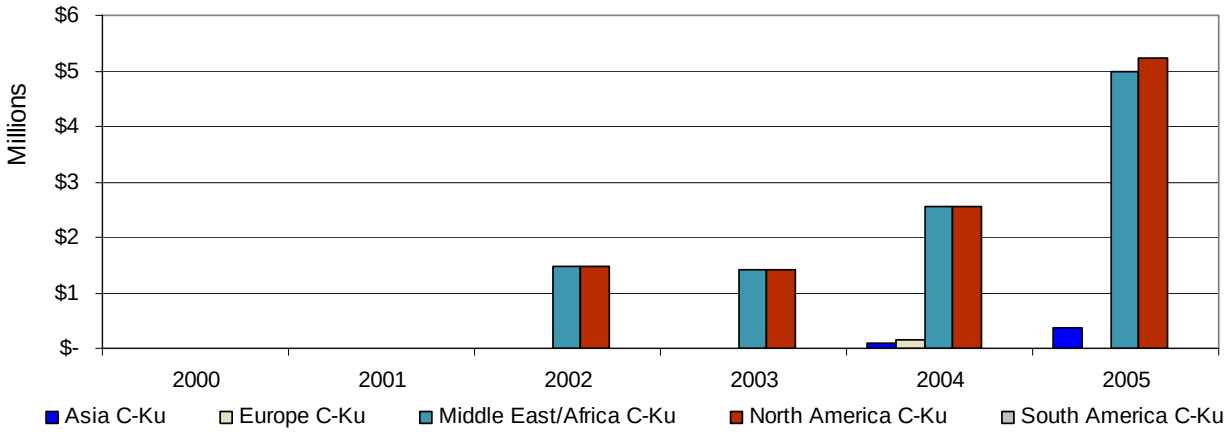


Figure E-7 DSTS-G Spend by Region, C-Ku Crossband

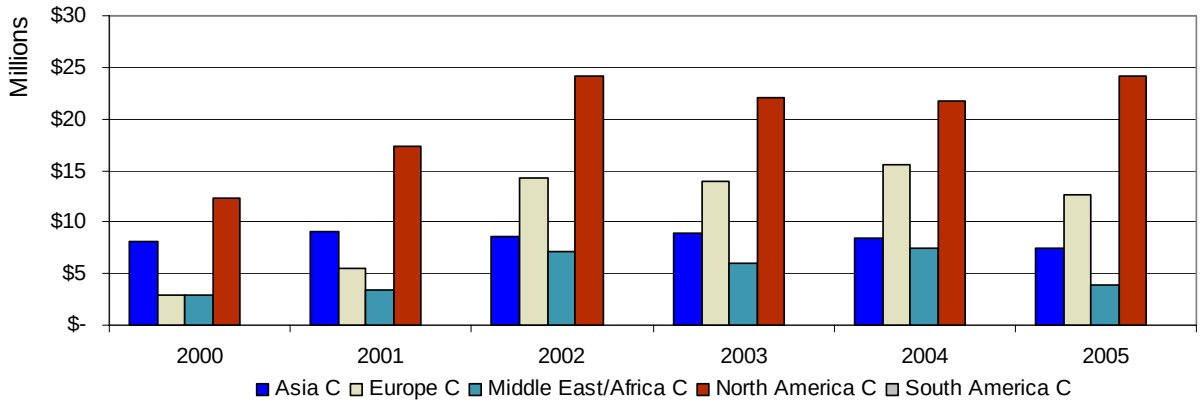


Figure E-8 Non DSTS-G Spend by Region, C-band

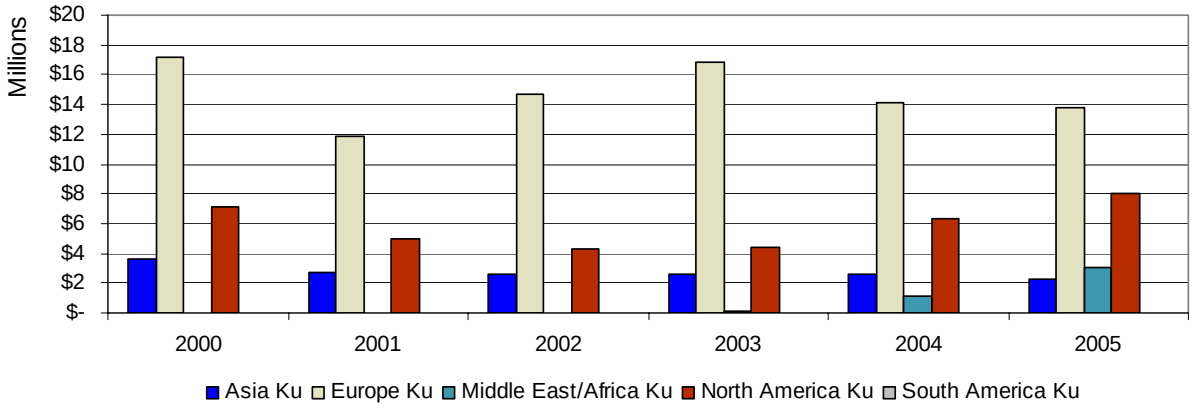


Figure E-9 Non DSTS-G Spend by Region, Ku-band

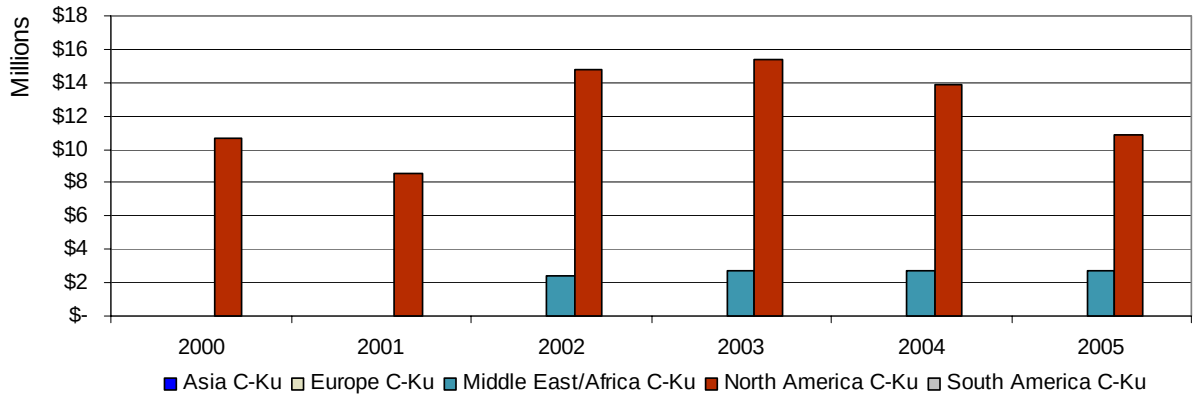


Figure E-10 Non DSTS-G Spend by Region, C-Ku Crossband

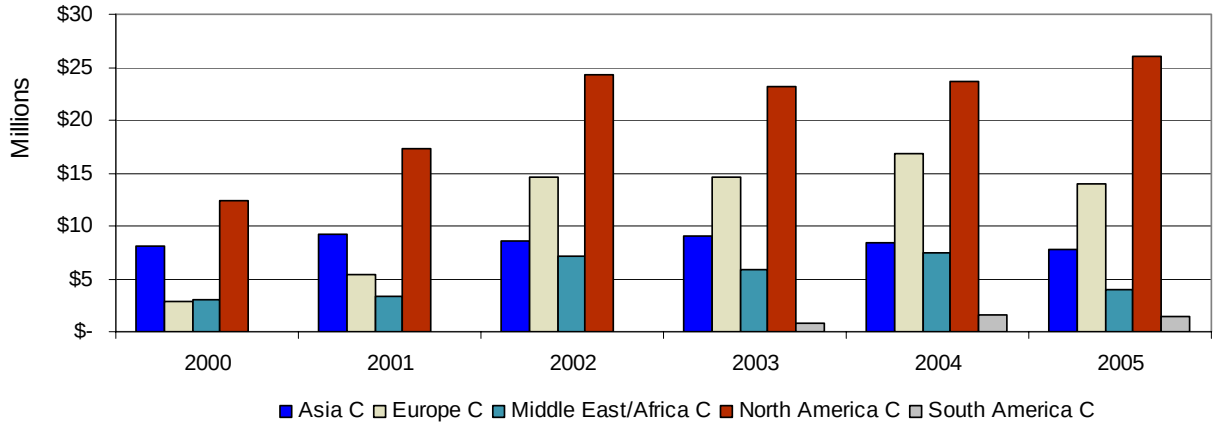


Figure E-11 DoD-Wide Spend by Region, C-band

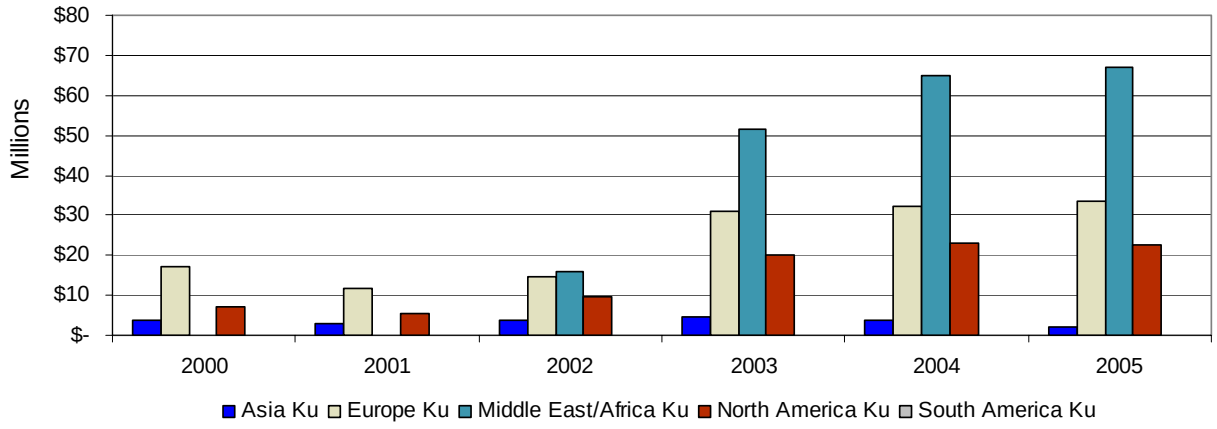


Figure E-12 DoD-Wide Spend by Region, Ku-band

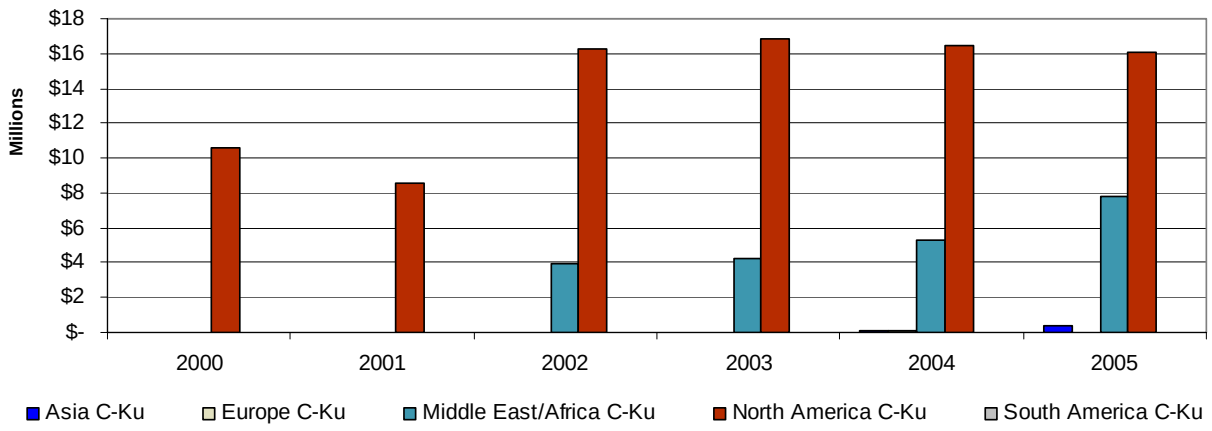


Figure E-13 DoD-Wide Spend by Region, C-Ku Crossband

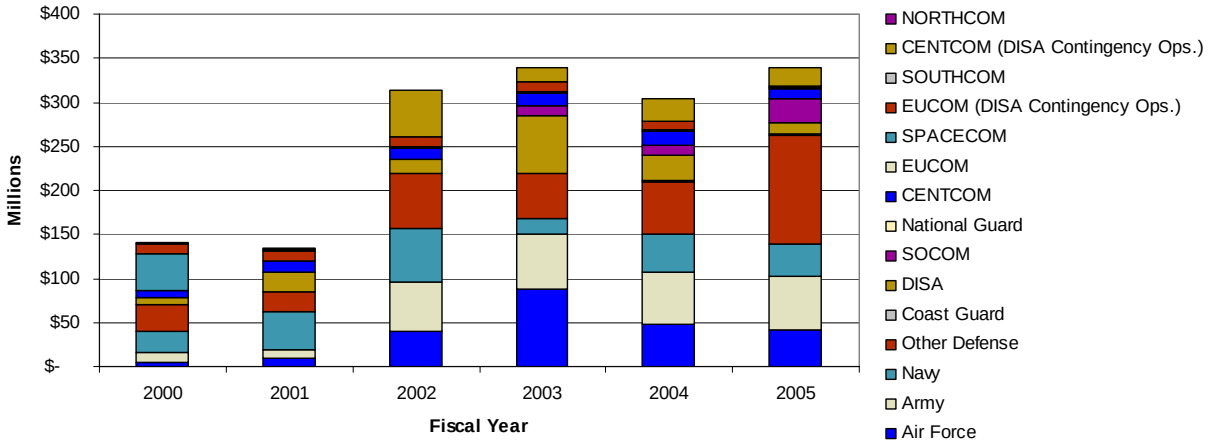


Figure E-14 DoD-Wide Obligated Spend by Customer

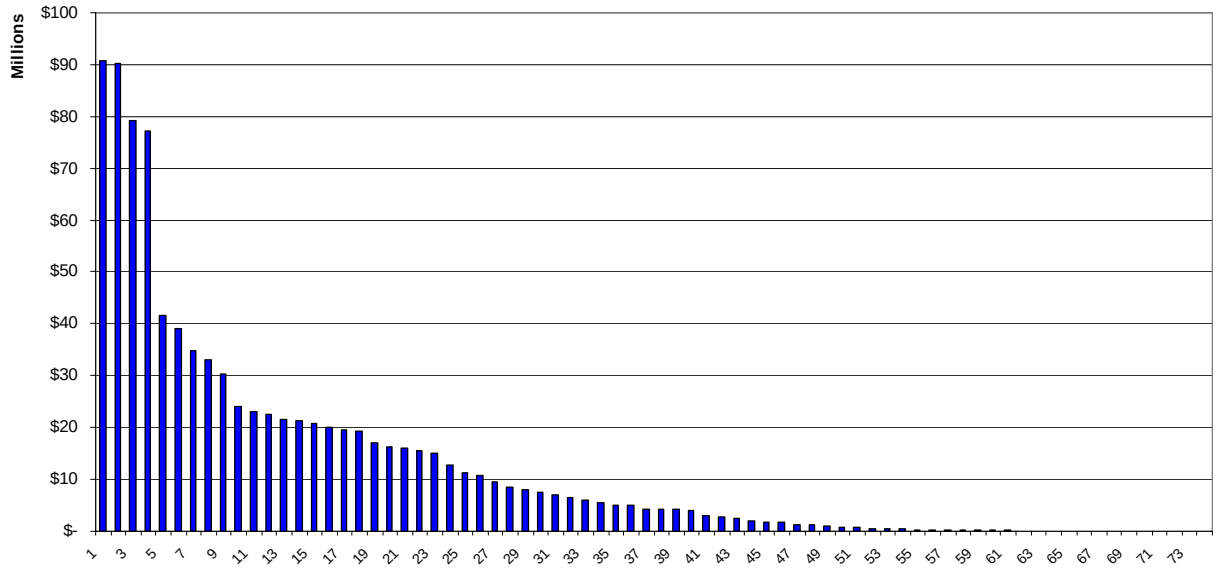


Figure E-15 DoD-Wide Spend by Satellite

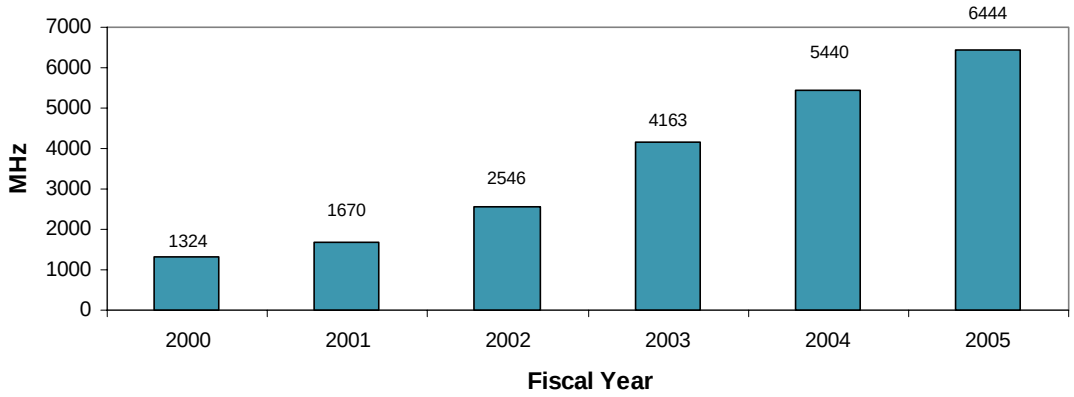


Figure E-16 DoD-Wide Bandwidth by Fiscal Year

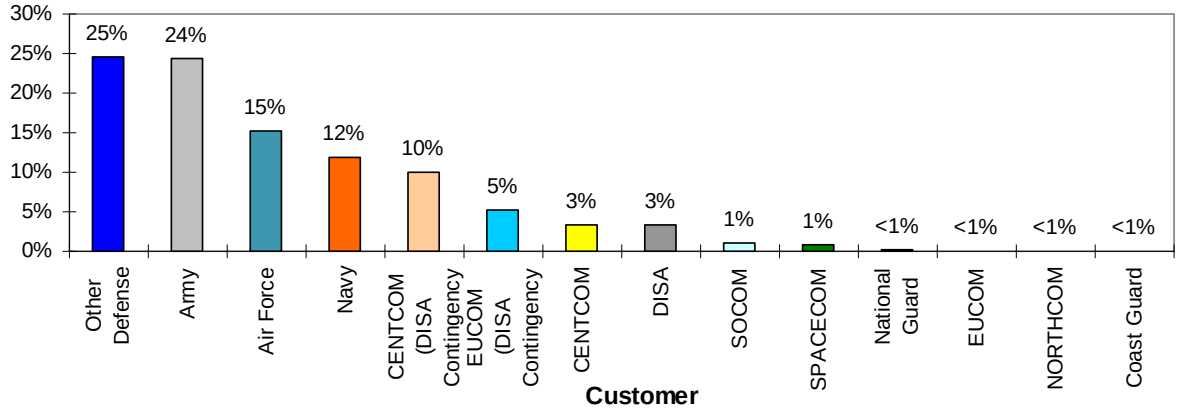


Figure E-17 DoD-Wide Bandwidth by Customer

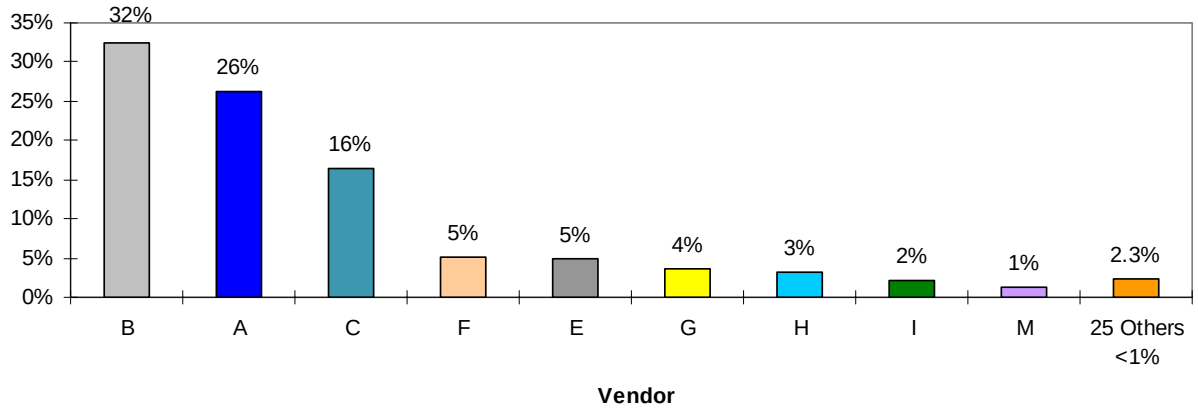


Figure E-18 DoD-Wide Bandwidth by Vendor

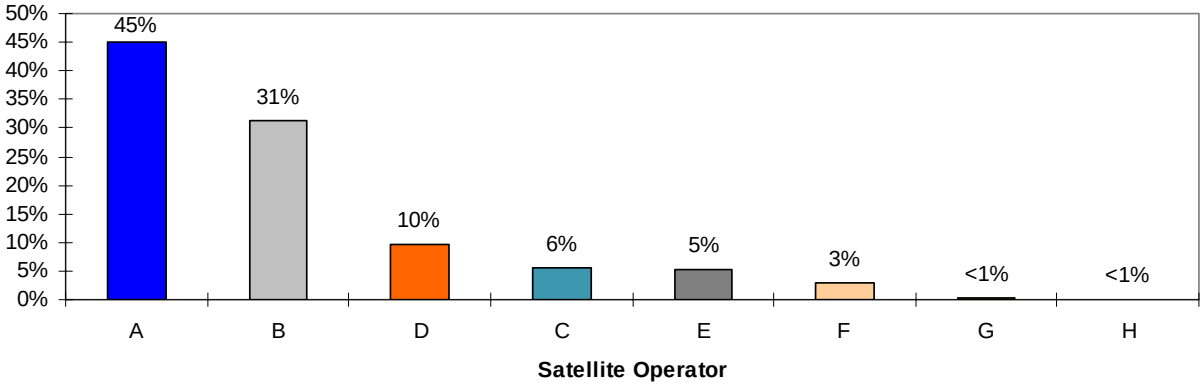


Figure E-19 Bandwidth by Operator

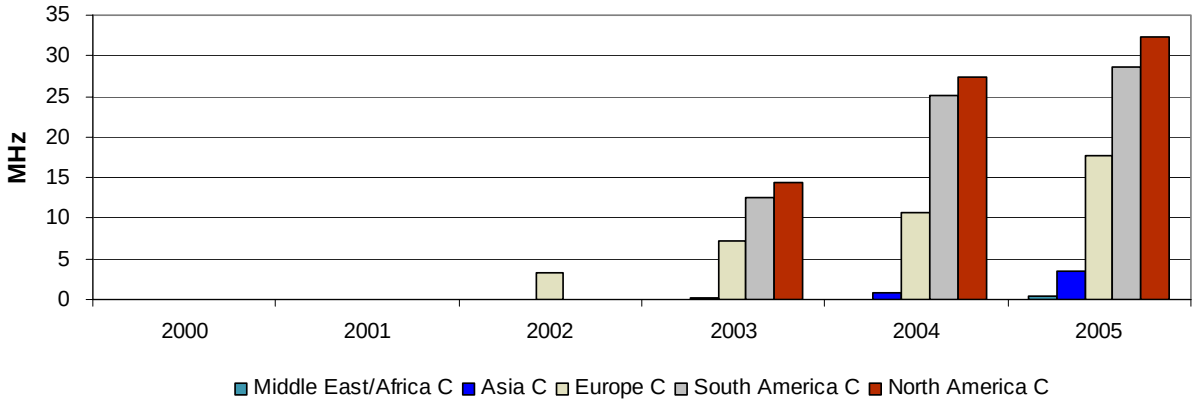


Figure E-20 DSTS-G Bandwidth Usage by Region, C-band

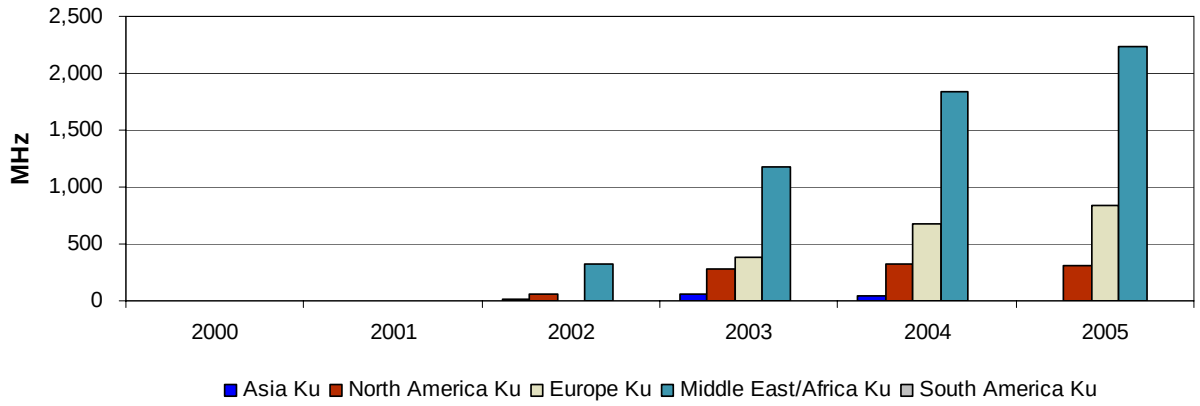


Figure E-21 DSTS-G Bandwidth Usage by Region, Ku-band

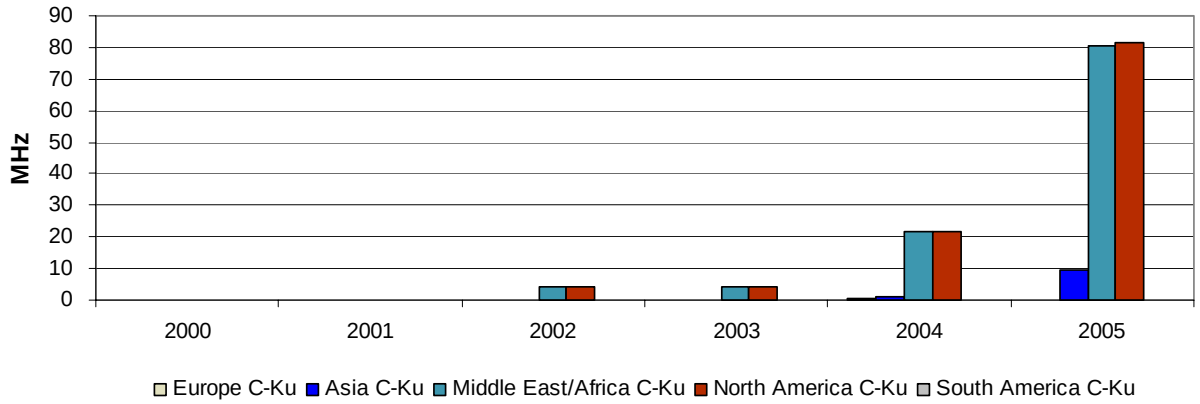


Figure E-22 DSTS-G Bandwidth by Region, C-Ku Crossband

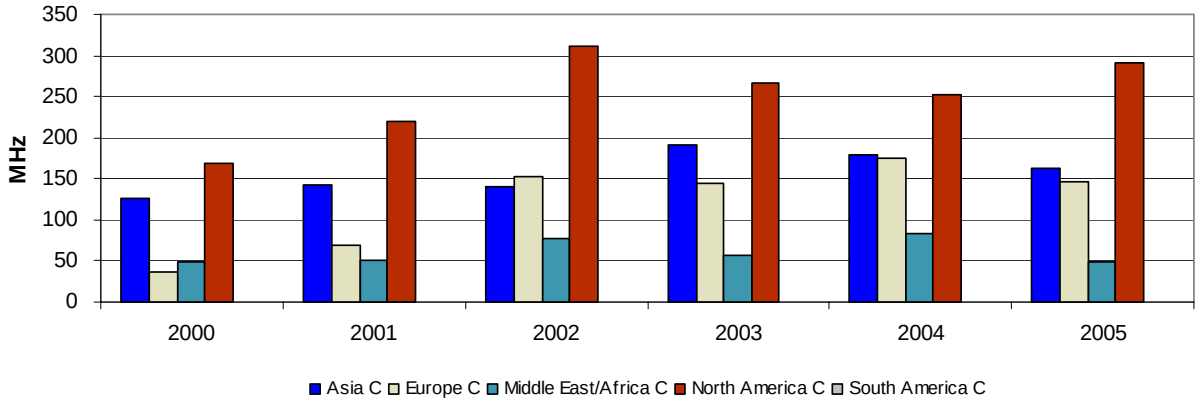


Figure E-23 Non-DSTS-G Bandwidth by Region, C-band

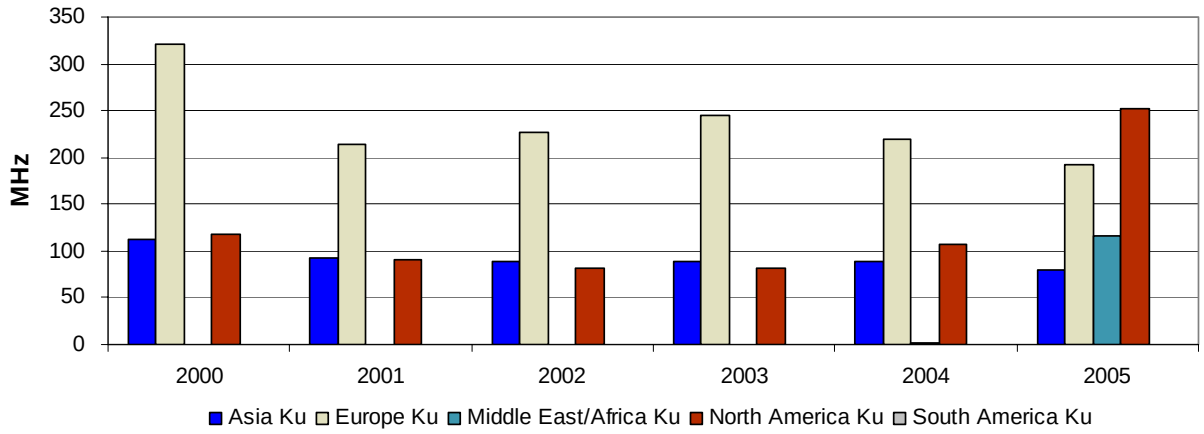


Figure E-24 Non-DSTS-G Bandwidth by Region, Ku-band

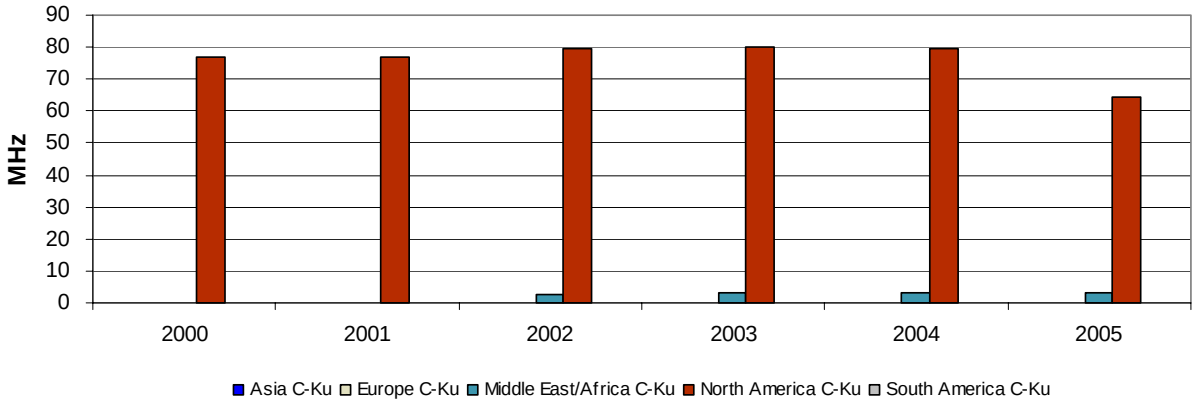


Figure E-25 Non-DSTS-G Bandwidth by Region, C-Ku Crossband

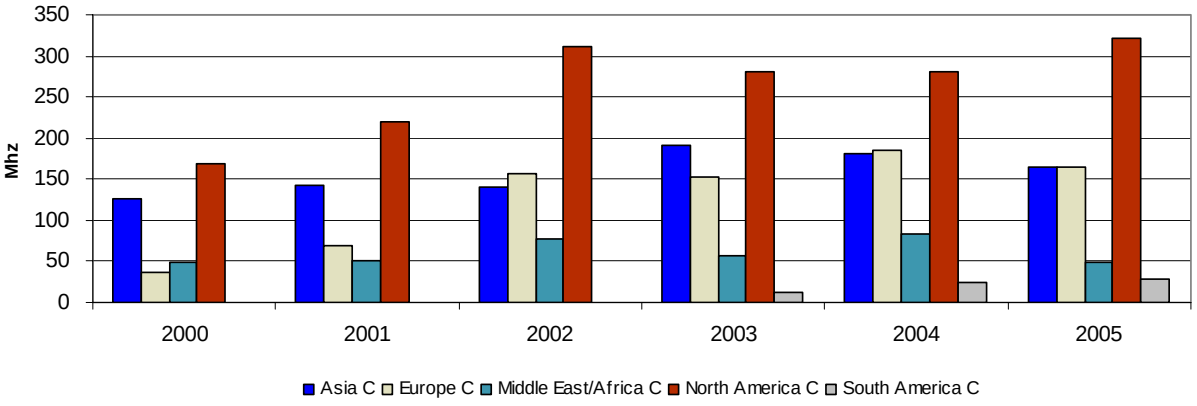


Figure E-26 DoD-Wide Bandwidth by Region, C-band

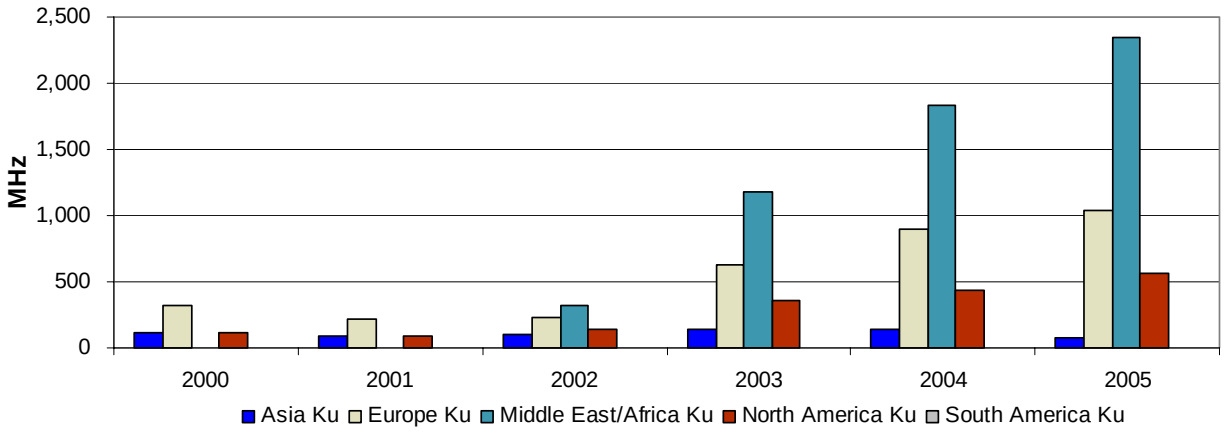


Figure E-27 DoD-Wide Bandwidth by Region, Ku-band

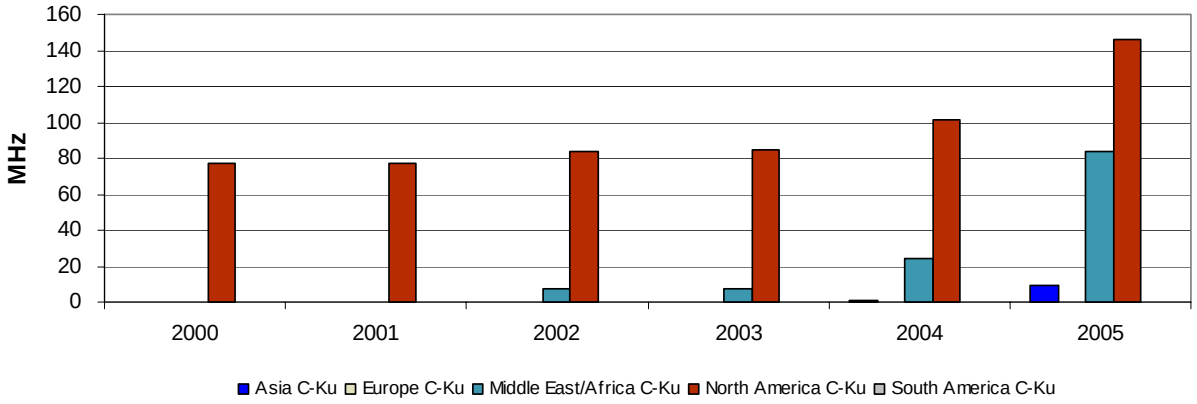


Figure E-28 DoD-Wide Bandwidth by Region, C-Ku Crossband

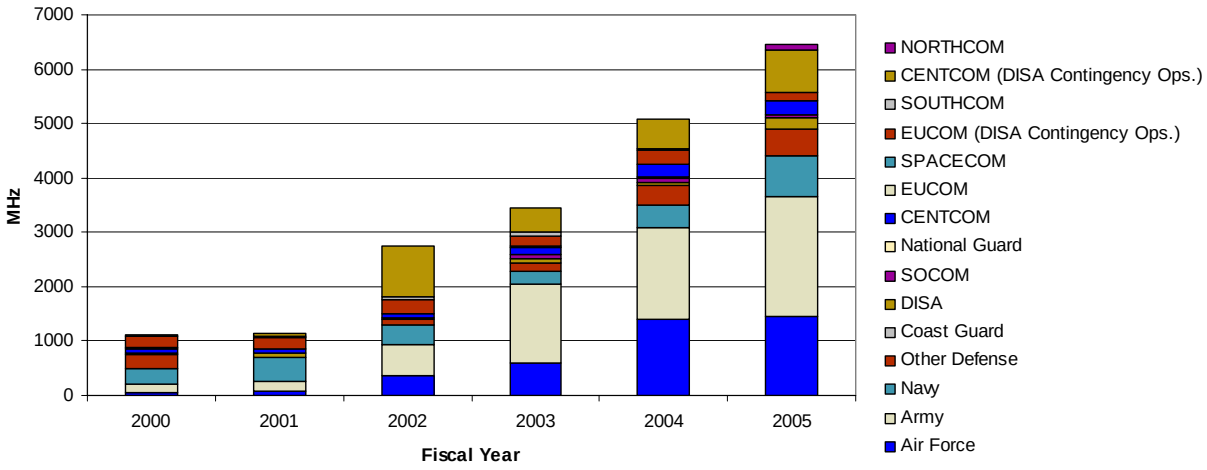


Figure E-29 DoD-Wide Obligated Bandwidth by Customer

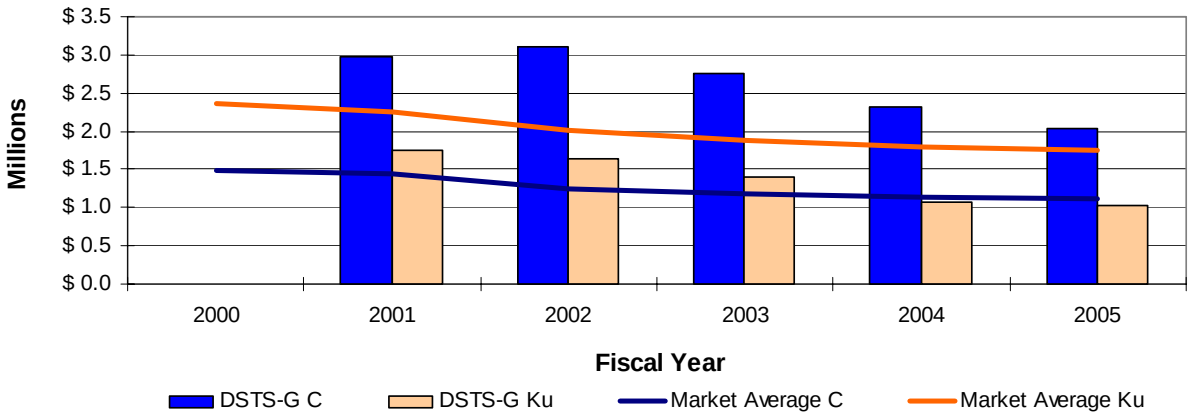


Figure E-30 DSTS-G versus Market Average TPE Cost by Band

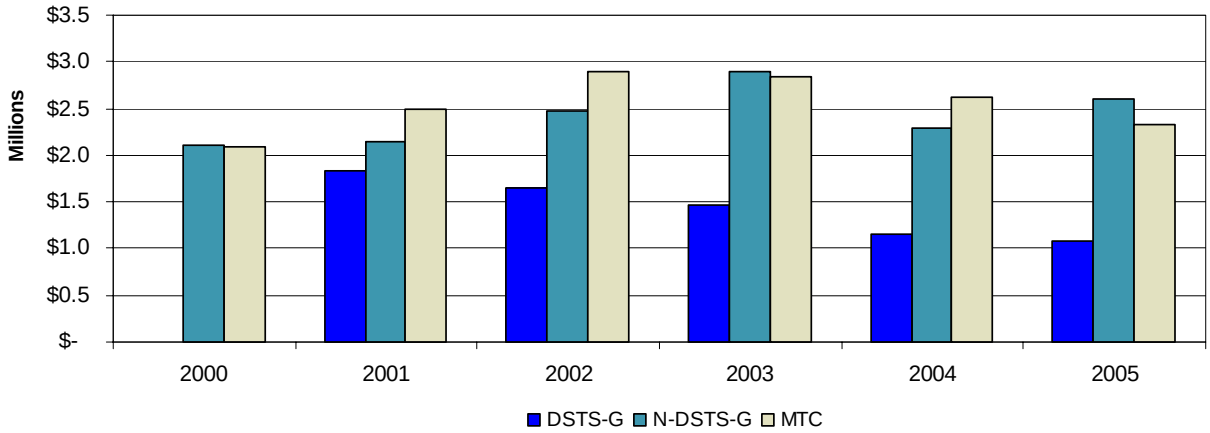


Figure E-31 Average TPE Cost by Programs

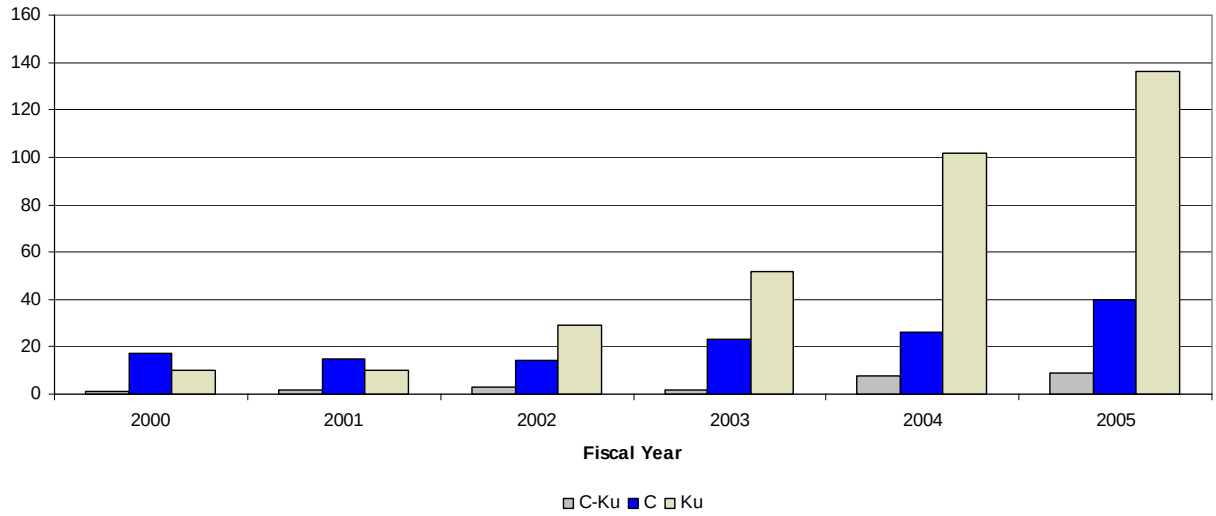


Figure E-32 Contracts/Task Order Execution by Band

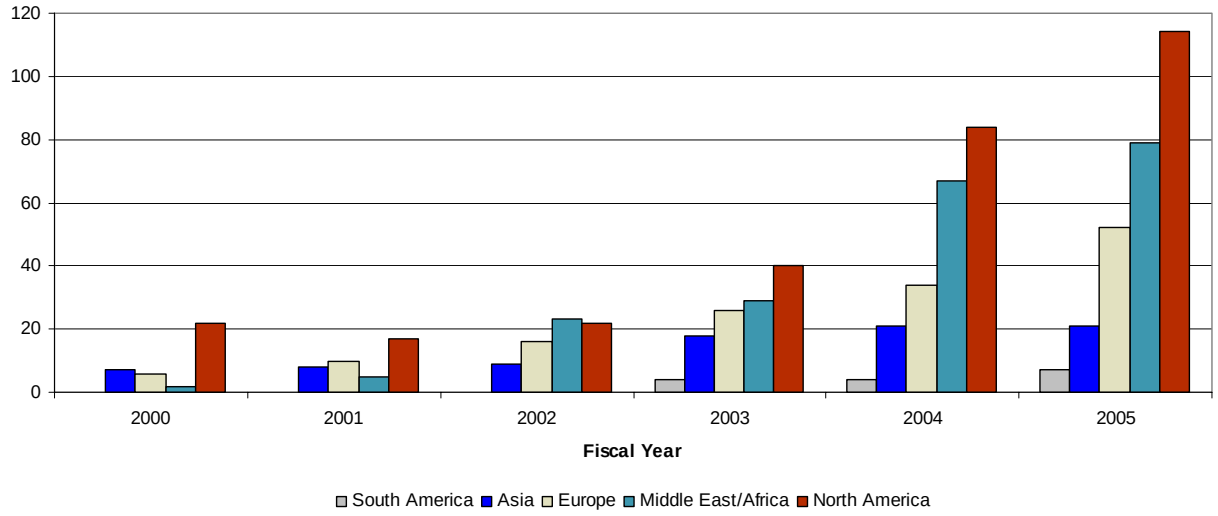


Figure E-33 Contract/Task Order Execution by Region

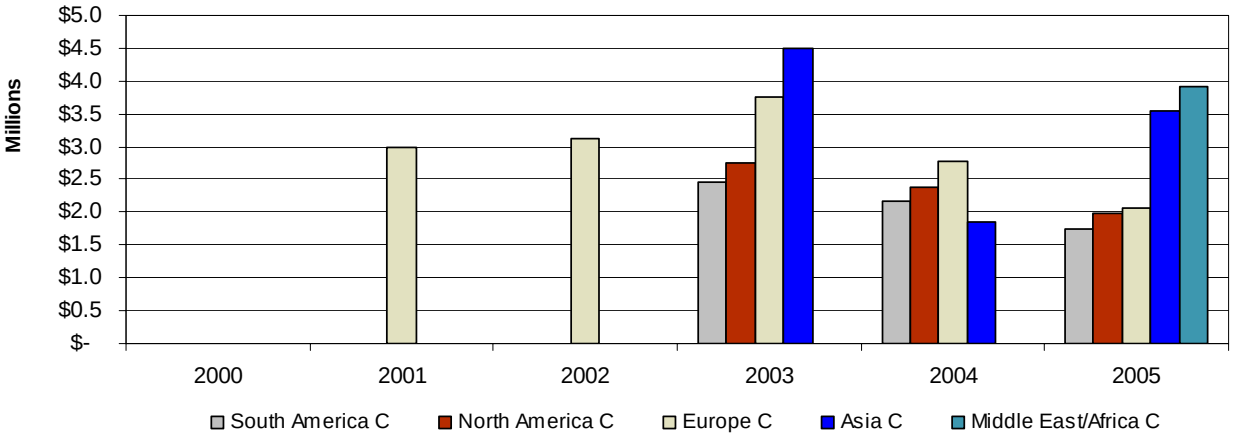


Figure E-34 DSTS-G Average TPE Cost by Region, C-band

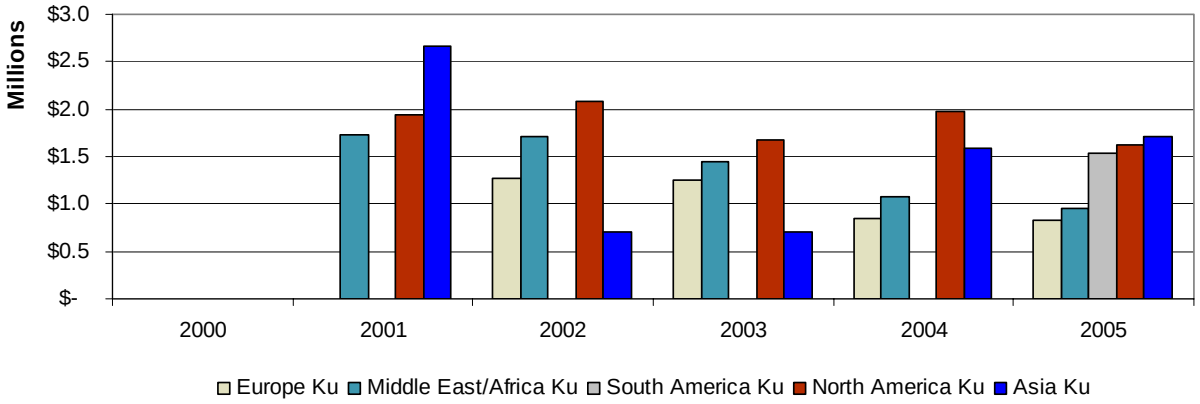


Figure E-35 DSTS-G Average TPE Cost by Region, Ku-band

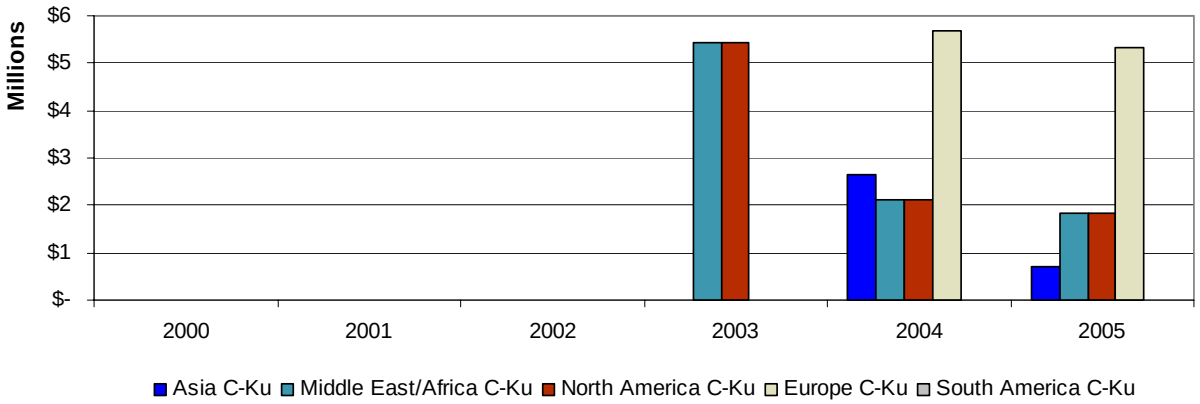


Figure E-36 DSTS-G Average TPE Cost by Region, C-Ku Crossband

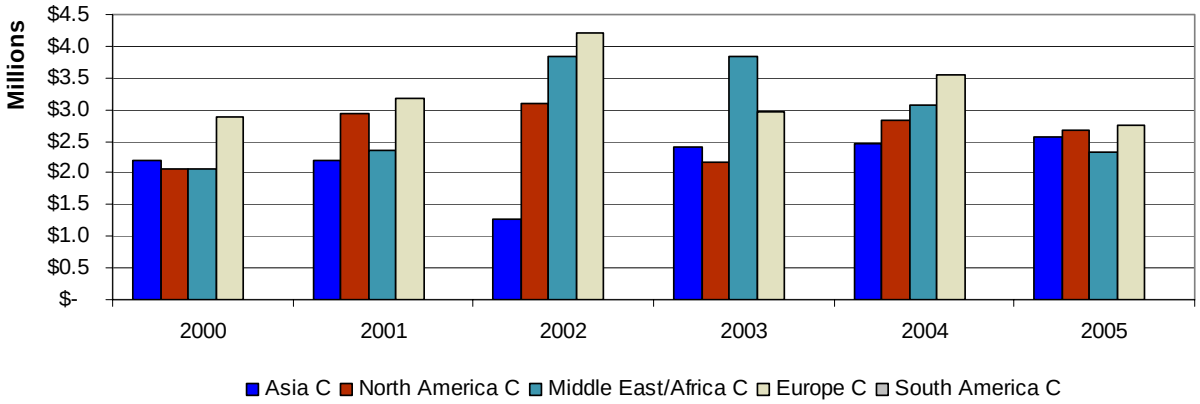


Figure E-37 Non DSTS-G TPE Cost by Region, C-band

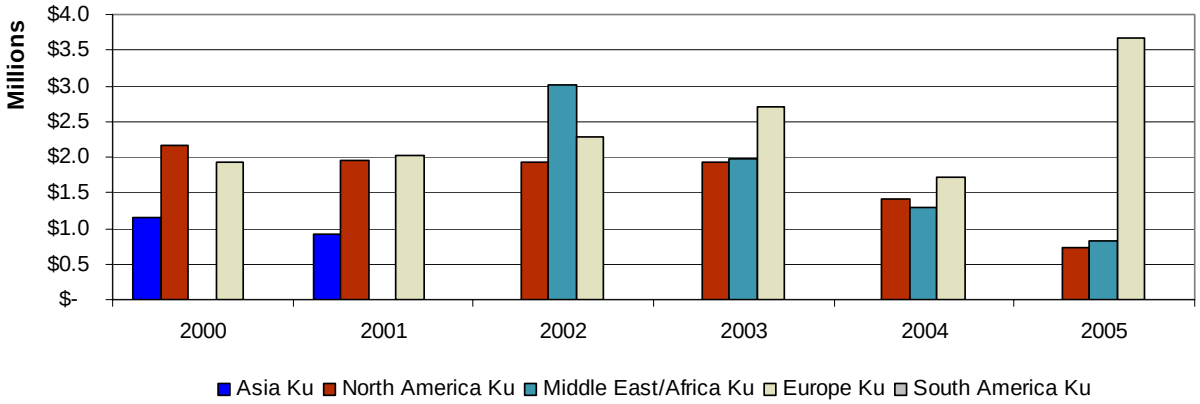


Figure E-38 Non DSTS-G Average TPE Cost by Region, Ku-band

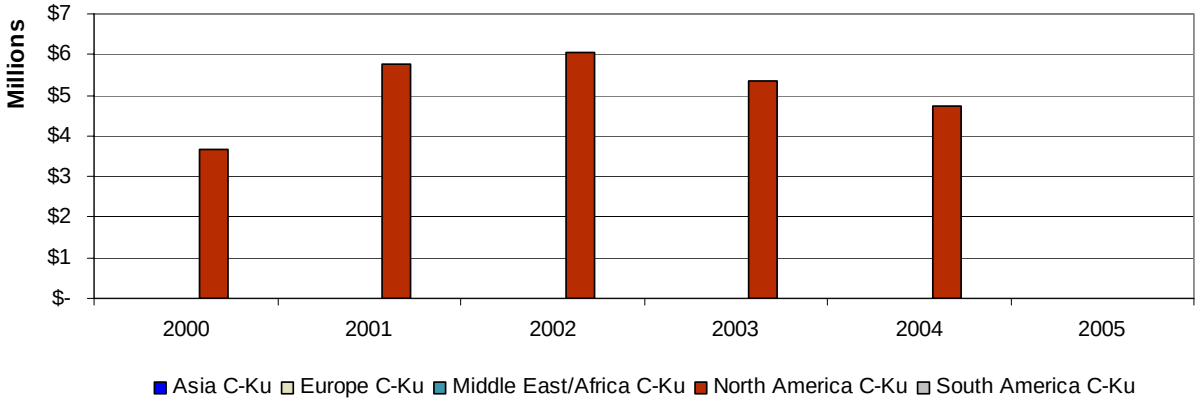


Figure E-39 Non DSTS-G Average TPE Cost by Region, C-Ku Crossband

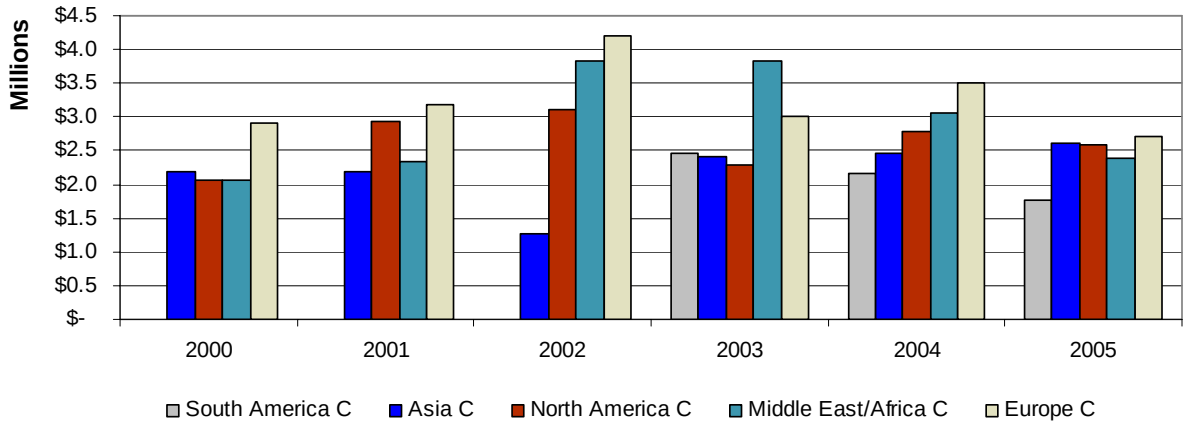


Figure E-40 DoD-Wide Average TPE Cost by Region, C-band

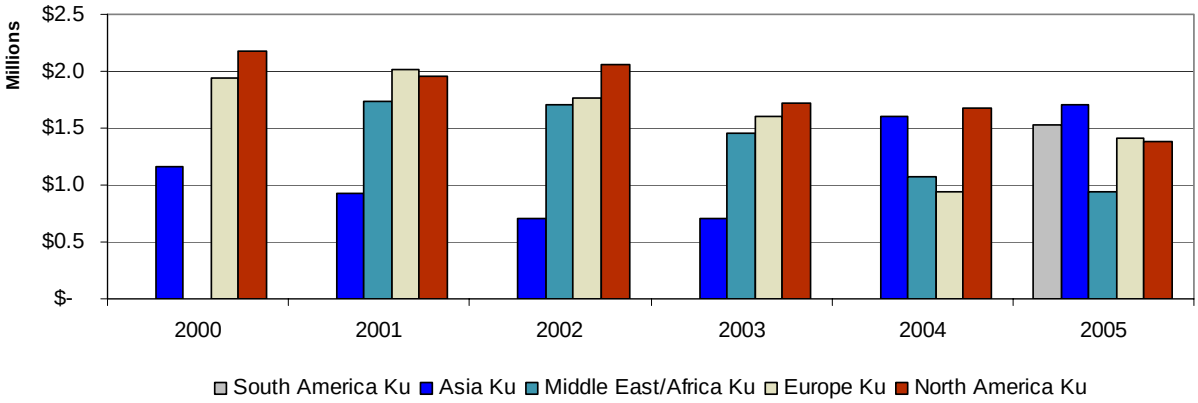


Figure E-41 DoD-Wide Average TPE Cost by Region, Ku-band

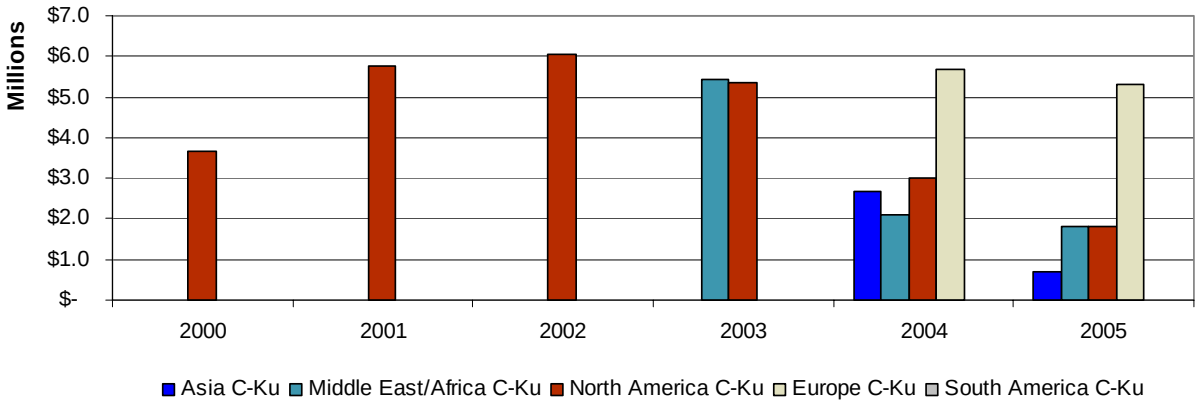


Figure E-42 DoD-Wide Average TPE Cost by Region, C-Ku Crossband

Department of Defense

Commercial Satellite Communications (COMMSATCOM) Service

Spend Analysis and Strategy Report

Appendix F

References

June 7, 2006

F. APPENDIX F – REFERENCES

F.1 Congressional Guidance

- National Defense Authorization Act (NDAA) for Fiscal Year 2005, Sec 803
- National Defense Authorization Act (NDAA) for Fiscal Year 2006, Sec 818

F.2 Government Accounting Office (GAO) Reports

- GAO-04-206 - SATELLITE COMMUNICATIONS: Strategic Approach Needed for DoD's Procurement of Commercial Satellite Bandwidth, December 2003
- GAO-03-661 – Improved Knowledge of DoD Service Contracts Could Reveal Significant Savings
- GAO-02-230 – Taking a Strategic Approach Could Improve DoD's Acquisition of Services
- GAO-03-935 – High-Level Attention Needed to Transform DoD Services Acquisition
- GAO-04-870 – Using Spend Analysis to Help Agencies Take a More Strategic Approach to Procurement

F.3 DoD Policy

- ASD(NII) Policy for the Planning, Acquisition and Management of Commercial Satellite Communications Fixed Satellite Services (FSS), 14 December 2004

F.4 Multiyear Contracting Legal References

- U.S. Code
  - 41 U.S.C. Sec. 254c. - PUBLIC CONTRACTS - Multiyear contracts
  - 10 U.S.C. 2306 – ARMED FORCES - Kinds of contracts
  - 40 U.S.C. Sec. 322 - PUBLIC BUILDINGS, PROPERTY, AND WORKS - Information Technology Fund
  - 40 U.S.C. Sec. 501 - PUBLIC BUILDINGS, PROPERTY, AND WORKS - Services for Executive Agencies
- Federal Acquisition Regulations (FAR)
  - Subpart 17.1—Multi-year Contracting
    - 17.103 Definitions
    - 17.104 General
    - 17.105-1 Uses
    - 17.105-2 Objectives
    - 17.108 Congressional notification
  - Subpart 37.1—Service Contracts—General
    - 37.101 Definitions
    - 37.106 Funding and term of service contracts
- Defense Federal Acquisition Regulations Supplement (DFARS)
  - SUBPART 217.1--MULTIYEAR CONTRACTING (Revised May 9, 2005)
    - General
    - Multiyear contracts for services
    - Multiyear contracts for supplies

        - Multiyear contracts for weapon systems
        - Multiyear contracts that employ economic order quantity procurement
    - 239.7405 Delegated authority for telecommunications resources
- Federal Property and Administration Services Act of 1949, Sec 201
- Government Services Administration (GSA) Acquisition Manual
    - Subpart 517.1—Multiyear Contracting
        - Authority
        - Contract clauses
        - Contracts

F.5 Spend Analysis Benchmarks/Resources

- Rand – Using a Spend Analysis to Help Identify Prospective Air Force Purchasing and Supply Management Initiatives
- Aberdeen Group – Best Practices in Spending Analysis
- Emptoris – Achieving Spend Visibility: Benefits, Barriers, and Best Practices
- Procuri – Total Analytics (Software Package)
- Zycus Analytics– Spend Analysis v3.0 (Software Package)
- CFO.com – Where does the Money Go?

F.6 Market Analyst Reports

- Euroconsult, World Satellite Communications & Broadcasting Markets Survey, Ten Year Outlook, 2005
- Euroconsult, World Satellite Communications & Broadcasting Markets Survey, Ten Year Outlook, 2003
- Frost & Sullivan, Commercial Geostationary Satellite Transponder Market for Europe, the Middle East and Africa, #A398-66, 2002
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- Frost & Sullivan, Commercial Geostationary Satellite Transponder Market in Asia: Growing Profitably in a Demanding Market, #A528-66, 2003
- Frost & Sullivan, Commercial Geostationary Satellite Transponder Markets for Asia, Sep 2005
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Department of Defense

Commercial Satellite Communications (COMMSATCOM) Service

Spend Analysis and Strategy Report

Appendix G

Data-Collection Tasker & Data Elements

June 7, 2006

G. APPENDIX G – DATA-COLLECTION TASKER & DATA ELEMENTS

G.1 Tasker

ASSISTANT SECRETARY OF DEFENSE
6000 DEFENSE PENTAGON
WASHINGTON, DC 20301-6000

NETWORKS AND INFORMATION INTEGRATION

FEB 17 2006

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
ASSISTANT SECRETARY OF DEFENSE FOR PUBLIC AFFAIRS
DIRECTOR, NATIONAL SECURITY AGENCY
DIRECTOR, NATIONAL RECONNAISSANCE OFFICE
DIRECTOR, NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
DIRECTOR, DEFENSE INTELLIGENCE AGENCY
DIRECTOR, DEFENSE INFORMATION SYSTEMS AGENCY
COMMANDERS OF COMBATANT COMMANDS

SUBJECT: Data Call to Support Commercial SATCOM Spend Analysis Directed by the Fiscal Year 2006 National Defense Authorization Act

Section 818 of the fiscal year 2006 National Defense Authorization Act (NDAA) directed the Department to perform a comprehensive spend analysis of commercial satellite communications expenditures for FY 2000 through 2005, and to report back within five months of the enactment of the NDAA. This spend analysis is one critical element of the directed commercial satellite communications services acquisition strategy review required by Section 818.

The short time frame made available by Congress to complete the spend analysis makes it imperative that this information be collected and evaluated as soon as possible. Given the requirement to include your expenditures in the spend analysis, request your designated point of contact complete the attached form (Attachment A) and return it via email no later than March 30, 2006 to Mr. David Dunaway at david.dunaway@disa.mil. A second requirement of this data call is for your component or agency to provide information on your multiyear contracts in order to review terms and conditions in an exploration of contracting mechanisms. Detailed instructions for compiling and reporting both sets of information are attached (Attachment B). To aid your organization in executing these tasks, a list of contracts and acquiring organizations for commercial SATCOM service or related products obtained from the Individual Contracting Action Reports (DD Form 350) is also attached (Attachment C). All attachments are enclosed via compact disc for your convenience.

I appreciate your timely support in completing this requirement. To assist in working through this task, request you provide my staff your point of contact by March 3, 2006. My designated point of contact for this action is Mr. Larry Krebs. He can be reached at (703) 607-0738, or via email at lawrence.krebs.ctr@osd.mil.

John G. Grimes

Attachments:
as stated

G.2 Data Element Definitions

	Data Element		Definition
Contract Information	**Contract Number**		Government Assigned Contract Identifier
	Task Order Number ("0" if N/A)		Government Assigned Task Order Identifier. May be an additional identifier under the given contract.
	Base or Option Year Number		Base or option year number of the given contract or task order.
	Item Identifier		Item identifier for multiple items under a contract or task order, e.g., individual links procured, barware items, etc. (separate procurements)
	KO	**Name**	Name of Contracting Officer
		Phone Number	Phone number of Contracting Officer
Order Information	**Customer / Bill Payer**		Paying customer, e.g., service and/or unit
	Effort		Effort for which the procurement supports
	Term Usage		Length of time planned for the service procurement; i.e.; long-term planned/consistent service, short term planned service, immediate surge requirements
	Period of Performance Start (MM/DD/YYYY)		Start date of service procurement; in MM/DD/YYYY format
	Period of Performance End (MM/DD/YYYY)		End date of service procurement; in MM/DD/YYYY format
	Contract Type		Type of Award, e.g., Indefinite Delivery Indefinite Quantity (IDIQ) , Task Order (TO), Basic Ordering Agreement (BOA), Firm Fixed Price (FFP)
	Vendor / Integrator / Reseller		COMMSATCOM Integrator or reseller contracted on behalf of the Department of Defense
	Satellite Bandwidth Provider		Specific Satellite Operator providing leased bandwidth
	Satellite Number		Operator's identifier for satellite providing leased bandwidth
	Satellite Transponder Number		Operator's identifier for satellite transponder providing leased bandwidth

	Orbit Type		Satellite orbit type, e.g., normal or inclined
	Orbital Position (degrees)		Geosynchronous Earth Orbit degree location of satellite providing leased bandwidth
	Bandwidth Capacity (MHz)		Total service procurement bandwidth purchased
	Frequency Band		Frequency band of leased bandwidth
	Beam Coverage		Type of satellite service beam used
	Transmit Location (Tx)		Primary transmit location
	Receive Location (Rx)		Primary receive location
	Preemption Scheme (if applicable)		Contract terms for user bandwidth to be preempted for another user (brief summary)
	Restoration Scheme (if applicable)		Contract terms for user bandwidth to be restored when a satellite or ground element is no longer available for service (brief summary)
Pricing Breakdown	**Total Cost**		Total contract/task order cost (inclusive)
	Space Segment		Cost of space segment leased bandwidth
	M&C		Cost of Monitor and Control services
	Teleport Service		Cost of leased teleport service
	Leased Terminals		Cost of leased terminals
	HNA		Cost of Host Nation Agreement
	Purchased Equipment	**Cost**	Cost of any purchased equipment, e.g., terminals, network equipment, modems, etc.
		Description	Description of purchased equipment
		Original Equipment Manufacturer	Specific manufacturer of purchased equipment
	Other	**Cost**	Any other costs not included in above categories
		Description	Description of other costs
	Cost Data Accuracy		Indication of the accuracy of the provided cost data; if the data is drawn directly from procurement documents select "Definitive", if the cost data is estimated from known purchases select "Estimate"
Contacts	**Data-entry Personnel**	**Name**	Name of person entering particular line item data
		Phone Number	Phone number of person entering particular line item data
	Task Monitor / COTR	**Name**	Name of specific procurement Task Monitor or Contracting Officer's Technical Representative
		Phone Number	Phone number of specific procurement Task Monitor or Contracting Officer's Technical Representative
Comments	**Comments**		Any specifications pertaining to "other" designations in data elements, or any additional comments